NMVCCS VARIABLE MANUAL

Crash

Form Screen Name: Date of crash

Oracle Variable: CRASH.CRASHDATE 541

Screen Name: Date of crash

Form # - Name: 1 -

SAS Data Set:

SAS Variable:

Remarks:

Enter the date of crash listed on the PAR. This is the only source for this variable. Every effort should be made to obtain a PAR with the correct date. If the jurisdiction cannot or will not provide a PAR with the date matching your correct response date, then the date on the PAR submitted with the case must be used.

Range:

01-01-2005 to _____
Cannot be future date.

Method: Enter Date ____ ____ - ____ ____ - ____

Sources:

PAR

Form Screen Name: PAR time of crash   2

Oracle Variable: CRASH.TIME   171

Screen Name: PAR time of crash

Form # - Name: 2 -

SAS Data Set:

SAS Variable:

Remarks:

Enter the time recorded on the PAR. If the time is not recorded on the PAR, code unknown in this variable. Do not use the time recorded in the NORL.

Range:

0001 - 2400, 9999

Method: Enter time _____:_____

	Oracle Value	SAS Value
Element Attributes:		
9999 Unknown time of crash	-9999	9999

Sources:

PAR

Form Screen Name: Longitude

Oracle Variable: CRASH.LONGITUDE   3066

Screen Name: Longitude

Form # - Name: 3 -

SAS Data Set:

SAS Variable:

Remarks:
Record the longitude of the crash location in degrees and minutes. This information can be obtained from the researcher's GPS units. This information is useful to the road departments in the PSUs.

Range:
00-360 degrees; input in degrees minutes

Method: Enter ___ ___ ___ degs ___ ___ mins

Sources:
REVIEWER ASSESSMENT

Form Screen Name: **Latitude**   4

Oracle Variable: CRASH.LATITUDE   3067

Screen Name: Latitude

Form # - Name: 4 -

SAS Data Set:

SAS Variable:

Remarks:

Record the latitude of the crash location in degrees and minutes. This information can be obtained from the researcher's GPS units. This information is useful to the road departments in the PSUs.

Range:

00-90 degrees; degrees/minutes

Method: Enter ___ ___ ___ degs ___ ___ mins

Sources:

RESEARCHER ASSESSMENT

Form Screen Name: **Presence at crash scene**

Oracle Variable: CRASH.PRESENT_ON_SCENE   2836

Screen Name: Presence at crash scene

Form # - Name: 5 -

SAS Data Set:

SAS Variable:

Remarks:

Prompt clearing of a scene presents issues to the NMVCCS. To determine the level of effort required from the researchers, it is important to record what is present at the scene on the arrival of the researcher. Select as many as apply except choice 1. If choice 1 (Not on-scene, nothing present) is selected then all other choices must be blank.

Range:

Method: Fill all that apply

Element Attributes:	**Oracle Value**	**SAS Value**
1 Not on-scene, nothing present Fill in the circle if none of the drivers or occupants of the qualifying intransport vehicles or nonmotorists involved in the crash, police, or EMS are at the scene when the researcher arrives.	1	1
2 Crash vehicles present Fill in the circle if any of the qualifying intransport vehicles involved in the crash are at the scene when the researcher arrives.	2	2
3 Police present Fill in the circle if a police officer is at the scene when the researcher arrives	3	3
4 EMS present Fill in the circle if EMS is at the scene when the researcher arrives.	4	4
5 Drivers present Fill in the circle if any of the drivers of the qualifying intransport vehicles involved in the crash are at the scene when the researcher arrives.	5	5
6 Occupants present Fill in the circle if any of the occupants of the qualifying intransport vehicles involved in the crash are at the scene when the researcher arrives.	6	6
7 Non-motorists present Fill in the circle if any of the nonmotorists involved in the crash are at the scene when the researcher arrives.	7	7
8888 Other present (specify) :	-8888	8

Sources:

SCENE INSPECTION

Form Screen Name: **Event Number**

Oracle Variable: EVENT.EVENT_NUMBER   1315

Screen Name: Event Number

Form # - Name: 6 -

SAS Data Set:

SAS Variable:

Remarks:

The time rank of the event in the crash sequence.   This is precoded on the forms; the researcher should attempt to estimate the sequence of events as soon as possible in the investigation. The numbering of the vehicles is directly related to this number

Range:

Method: Fill a single item

Sources:

RESEARCHER ASSESSMENT

Form Screen Name: **Vehicle number**

Oracle Variable: EVENT.VEHICLE_STRIKER   1200

Screen Name: Vehicle number

Form # - Name: 7 -

SAS Data Set:

SAS Variable:

Remarks:

Number the vehicles as they become involved in the crash events. This should be done at the time of the initial investigation. Assigning the vehicle and non-motorist numbers at the time of investigation will assist the researcher in reconstruction of the Pre-crash elements for each vehicle and may reduce the number of return visits to the scene, vehicle or re-interviews of drivers.

Use the examples below as guidelines for vehicle numbering and classification.

Include all vehicles and nonmotorists contacted by any of the first three in-transport vehicles. Include all vehicles contacted by the objects set in motion by the first two in-transport vehicles during the crash events.

All road vehicles in the crash must be numbered. This includes vehicles that are not in-transport or are classified as working vehicles. Not in transport and working vehicles are defined in the General Vehicle and Other Vehicle sections of the manual in the In-transport variable.

Examples of numbering/data collection protocol:
All vehicles are CDS applicable unless noted.

Example #1
Eastbound Vehicle 1 runs off road, front strikes back of Vehicle 2 (not in transport).

Event 1 V-1 Front vs. V-2 Back

Inspection/interview V-1, document V-2 year/make/model/plane of damage/occupants

Example #2
Southbound Vehicle 1 runs off road into Vehicle 2 (not in-transport) front to back.
Vehicle 1 is redirected into northbound lane contacting in-transport NonCDS Vehicle 3 front to front.
Vehicle 3 is deflected into in-transport Vehicle 4 which is southbound behind Vehicle 1, front to front.
Vehicle 4 is redirected into of Vehicle 5 (not in transport) front to back
Vehicle 5 is redirected into roadway and is struck by northbound Vehicle 6 front to front.

Event 1 V-1 Front vs V-2 Back
Event 2 V-1 Front vs V-3 Front
Event 3 V-3 Front vs V-4 Front
Event 4 V-3 Front vs V-5 Back
Event 5 V-3 Front vs V-6 Front

Document all events in the crash.
Inspection/interview V-1,-3 and -4, document V-2 year/make/model/plane of damage/occupants

Example #3
Eastbound and down, Vehicle 1 runs off road into bicyclist 1, striking with front.
Vehicle 1 continues off road into NonCDS, not-in-transport Vehicle 2, occupied by a driver, front to front.
Vehicle 2 is deflected into the roadway and contacts in-transport Vehicle 3, which is eastbound behind Vehicle 1, front to front.
Vehicle 3 continues forward, striking not in-transport Vehicle 4 front to back,
Vehicle 3 is redirected into Vehicle 5 (not in-transport) front to back
Vehicle 5 is redirected into roadway and is struck by westbound, in-transport, NonCDS Vehicle 6, front to front.
Vehicle 6 strikes bicyclist 2 who was originally riding next to bicyclist 1

Form Screen Name: Vehicle number

 Oracle Variable: EVENT.VEHICLE_STRIKER

> Event 1 V-1 Front vs NM-1 Back
> Event 2 V-1 Front vs V-2 Front
> Event 3 V-2 Front vs V-3 Front
> Event 4 V-3 Front vs V-4 Back
> Event 5 V-3 Front vs V-5 Back
> Event 6 V-5 Front vs V-6 Front
> Event 7 V-6 Front vs NM-2 Back

Document all events in the crash. Inspection/interview V-1,V-3 and V-6, interview NM-1, document V-2, V-4 and V-5, year/make/model/plane of damage/occupants.

As can be seen from the previous examples, determining which crash participants to inspect/interview may be difficult. Most crash scenarios will not be as complex as Example #3.

The table below gives an indication of the elements necessary for a complete case. Please note the type of information for each vehicle based on its transport status. Also note the nonmotorist requirements at the bottom.

	Inspection	Interview	Assessment form
CDS in-transport	Complete	Complete	Complete
CDS not in-transport	Partial	None	None
CDS Working	Partial	None	None
Non-CDS in-transport	Complete	Complete	Complete
Non-CDS not in-transport	Partial	None	None
Non-CDS working	Partial	None	None l
Non-motorist	None	Complete	Complete

Vehicle inspection requirements in NMVCCS

Form Screen Name: **Vehicle number**

Oracle Variable: EVENT.VEHICLE_STRIKER   1200

Range:
     1-10

 Method: Enter a value _____

Element Attributes:		Oracle Value	SAS Value
1	Vehicle # 1	1	1
2	Vehicle # 2	2	2
3	Vehicle # 3	3	3
4	Vehicle # 4	4	4
5	Vehicle # 5	5	5
6	Vehicle # 6	6	6
7	Vehicle # 7	7	7
8	Vehicle # 8	8	8
9	Vehicle # 9	9	9
10	Vehicle # 10	10	10
9999	Unknown Vehicle number	-9999	9999

 Sources:
              RESEARCHER ASSESSMENT

Form Screen Name: **Class of striking vehicle**

Oracle Variable: EVENT.STRIKER_CLASS 1201

Screen Name: Class of striking vehicle

Form # - Name: 8 -

SAS Data Set:

SAS Variable:

Remarks:

The Passenger Car Classification Subcommittee, A3B11(1), of the Transportation Research Board, Traffic Records and Accident Analysis Committee, A3B11, assessed size based on the vehicle wheelbase. The guidelines for this classification can be found in the report entitled Recommended Definitions for Passenger Car Size Classification by Wheelbase and Weight, August 1984 by the previously mentioned subcommittee. This variable is the same variable that appears in the Identification section of the General Vehicle Form

Range:

Method: Fill a single item

Sources:

VEHICLE INSPECTION

PAR

Form Screen Name: **General Area of Damage**

Oracle Variable: EVENT.HIT_AREA_DAMAGE 1265

Screen Name: General Area of Damage

Form # - Name: 9 -

SAS Data Set:

SAS Variable:

Remarks:

Area of Damage of the striking vehicle.

For vehicles which are CDC applicable (e.g., pickups, light vans, and passenger cars) the guidelines from J224MAR80 must be applied, and the attributes provided under the "CDC Applicable and Other Vehicles" category must be used. This includes rollovers.

For vehicles which are TDC applicable (i.e., medium/heavy trucks) use the guidelines and the attributes provided under the "TDC Applicable Vehicles" category.

CDC applicable and Other Vehicles	TDC Applicable Vehicles
Front	Front
Right side	Right side
Left side	Left side
Back	Back of unit with cargo area
Top	(rear of trailer or straight truck)
Undercarriage	Back (rear of tractor)
Unknown	Rear of cab
	Front of cargo area
	Top
	Undercarriage
	Unknown

Unknown must be coded when the General Area of Damage — 1st on a vehicle is not known from any reliable source.

Range:

Method: Fill a single item

Sources:

VEHICLE INSPECTION
SCENE INSPECTION
PAR

Form Screen Name: **Object contacted category**

Oracle Variable: EVENT.OBJECT_HIT_TYPE   1209

Screen Name: Object contacted category

Form # - Name: 10 -

SAS Data Set:

SAS Variable:

Remarks:

   The category of object hit.

Range:

 Method: Fill a single item

 Sources:

            SCENE INSPECTION
            VEHICLE INSPECTION
            PAR

Form Screen Name: **Class of Vehicle**   13

Oracle Variable: EVENT.HIT_CLASS   1266

Screen Name: Class of Vehicle

Form # - Name: 11 -

SAS Data Set:

SAS Variable:

Remarks:

The Passenger Car Classification Subcommittee, A3B11(1), of the Transportation Research Board, Traffic Records ard Accident Analysis Committee, A3B11, assessed size based on the vehicle wheelbase. The guidelines for this classification can be found in the report entitled Recommended Definitions for Passenger Car Size Classification by Wheelbase and Weight, August 1984 by the previously mentioned subcommittee. This variable is the same variable that appears in the Identification section of the General Vehicle Form.

Range:

Method: Select from appendix list _____

Sources:

VEHICLE INSPECTION
PAR

Form Screen Name: **Object Contacted**

Oracle Variable: EVENT.OBJECT_HIT   1217

Screen Name: Object Contacted

Form # - Name: 12 -

SAS Data Set:

SAS Variable:

Remarks:
   Vehicle Number
      Refer to numbering guidelines in the CrashForm/Events/Vehicle Number instructions.
   Noncollision crash circumstances, which result in nonimpact related damage or harm.
      Overturn--rollover (excludes end-over-end)
      Rollover--end-over-end
      Jackknife
      Other intraunit damage (specify)
      Noncollision Injury
      Other noncollision (specify)
      Noncollision--details unknown
   Collision With Fixed Object
      When a vehicle impacts a tree, shrubbery, bush, pole or post and causes the fixed object or any portion
      thereof to become   dislodged or airborne such that the object or portion thereof subsequently falls on the
      vehicle, the appropriate object contacted attribute for the object in its dislodged or airborne state is the
      same as when the object was initially.
      Tree (<= 10 centimeters in diameter)
      Tree (> 10 centimeters in diameter)
      Shrubbery or bush
      Embankment
      Breakaway pole or post (any diameter)
      Concrete traffic barrier
      Impact attenuator
      Other traffic barrier refers to any longitudinal barrier
      Fence
      Wall
      Building
      Ditch or culvert
      Ground
      Fire hydrant
      Curb
      Bridge
      Other fixed object
      Unknown fixed object
   Nonbreakaway Pole or Post
      When a vehicle impacts a tree, shrubbery, bush, pole or post and causes the fixed object or any portion
      thereof to become dislodged or airborne such that the object or portion thereof subsequently falls on the
      vehicle, the appropriate object contacted attribute for the object in its dislodged or airborne state is the
      same as when the object was initially.
      Pole or post (< 10 centimeters in diameter) r
      Pole or post (> 10 but < 30 centimeters in diameter)
      Pole or post (> 30 centimeters in diameter)
      Pole or post (diameter unknown)
   Collision with Nonfixed Object
      Pedestrian
      Cyclist or cycle
      Other nonmotorist or conveyance
      Vehicle occupant
      Animal
      Train
      Trailer, disconnected in transport
      Object fell from vehicle in-transport

Form Screen Name: Object Contacted

Oracle Variable: EVENT.OBJECT_HIT   1217

      Other nonfixed object
    Other Event (specify)
    Unknown Event or Object

Range:

Method: Fill a single item

Sources:

      SCENE INSPECTION
      VEHICLE INSPECTION
      PAR

Form Screen Name: **General area of damage of struck vehicle**   16

Oracle Variable: EVENT.STRIKER_AREA_DAMAGE   1202

Screen Name: General area of damage of struck vehicle

Form # - Name: 13 -

SAS Data Set:

SAS Variable:

Remarks:

Area of Damage of the striking vehicle.

For vehicles which are CDC applicable (e.g., pickups, light vans, and passenger cars) the guidelines from J224MAR80 must be applied, and the attributes provided under the "CDC Applicable and Other Vehicles" category must be used. This includes rollovers.

For vehicles which are TDC applicable (i.e., medium/heavy trucks) use the guidelines and the attributes provided under the "TDC Applicable Vehicles" category.

CDC applicable and Other Vehicles   TDC Applicable Vehicles
    Front   Front
    Right side   Right side
    Left side   Left side
    Back   Back of unit with cargo area
    Top   (rear of trailer or straight truck)
    Undercarriage   Back (rear of tractor)
    Unknown   Rear of cab
                           Front of cargo area
                           Top
                           Undercarriage
                           Unknown

For Objects or noncollision events use the following codes:
Not a motor Vehicle
Noncollision

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Not a motor vehicle 0	1	1
2 Noncollision N	2	2
3 Front F	3	3
4 Right Side R	4	4
5 Left Side L	5	5
6 Back B	6	6
7 Top T	7	7

Form Screen Name: **General area of damage of struck vehicle**   17

Oracle Variable: EVENT.STRIKER_AREA_DAMAGE   1202

Element Attributes:	Oracle Value	SAS Value
8 Undercarriage U	8	8
10 Not a motor vehicle 0	10	10
11 Noncollision N	11	11
12 Front F	12	12
13 Right Side R	13	13
14 Left Side L	14	14
15 Back of unit with cargo area-rear of trailer or straight truck B	15	15
16 Back (rear of tractor) D	16	16
17 Rear of cab C	17	17
18 Front of cargo area V	18	18
19 Top T	19	19
20 Undercarriage U	20	20
9999 Unknown 9	-9999	9
9999 Unknown 9	-9999	21

Sources:

Form Screen Name: **Model year**

Oracle Variable: VEHICLE.MODELYEAR   3207

Screen Name: Model year

Form # - Name: 1 -

SAS Data Set:

SAS Variable:

Remarks:
Select the model year for which the vehicle was manufactured

Range:

Method: Enter Model Year ___ ___ ___ ___

	Oracle Value	SAS Value
Element Attributes:		
9999 Unknown	-9999	9999
Use only if the vehicle model year cannot be determined. This should occur rarely.		

Sources:
VEHICLE INSPECTION
PAR
REVIEWER ASSESSMENT
RESEARCHER ASSESSMENT

Form Screen Name: **Make**

Oracle Variable: VEHICLE.MAKE   876

Screen Name: Make

Form # - Name: 2 -

SAS Data Set:

SAS Variable:

Remarks:
    Select the make of this vehicle from the appendix list.

Range:

Method: Enter Make __ __ __ __ __ __ __ __ __ __

	Oracle Value	SAS Value
Element Attributes:		
9999 Unknown	-9999	9999
Unknown Make - Fill all spaces with 9s		

Sources:
            VEHICLE INSPECTION
            PAR
            REVIEWER ASSESSMENT
            RESEARCHER ASSESSMENT

Form Screen Name: Model

Oracle Variable: VEHICLE.MODEL   875

Screen Name: Model

Form # - Name: 3 -

SAS Data Set:

SAS Variable:

Remarks:
    Select the vehicle model for this vehicle.

Range:

Method: Enter Model __ __ __ __ __ __ __ __ __ __

Element Attributes:	Oracle Value	SAS Value
9999 Unknown	-9999	9999
Unknown Model - Fill all spaces with 9s		

Sources:
        VEHICLE INSPECTION
        PAR
        REVIEWER ASSESSMENT
        RESEARCHER ASSESSMENT

Form Screen Name: **Body type**

Oracle Variable: VEHICLE.BODY_TYPE   877

Screen Name: Body type

Form # - Name: 4 -

SAS Data Set:

SAS Variable:

Remarks:

Convertible (excludes sun-roof, t-bar) refers to a passenger car equipped with a removable or retractable roof. To qualify for this attribute, the entire roof must open. Convertible roofs are generally fabric; however, removable hardtops are also included. This attribute takes priority over 2-door or 4-door attributes.

2-door sedan, hardtop, coupe refers to a passenger car equipped with two doors for ingress/egress and a separate trunk area for cargo (i.e., trunk lid hinged below the backlight). Folding rear seats do not necessarily violate the separate "trunk area" concept.

3-door/2-door hatchback refers to a passenger car equipped with two doors for ingress/egress and a rear hatch opening for cargo (i.e., hinged above the backlight). The cargo area is not permanently partitioned from the passenger compartment area. 17 3-door coupe refers to a passenger car equipped with three doors (two front seat and one rear seat) for ingress/egress and a separate trunk area for cargo (i.e., trunk lid hinged below the backlight). Folding rear seats do not necessarily violate the separate "trunk area" concept.

4-door sedan, hardtop refers to a passenger car equipped with four doors for ingress/egress and a separate trunk area for cargo (i.e., trunk lid hinged below the backlight). Folding rear seats do not necessarily violate the separate "trunk area" concept.

5-door/4-door hatchback refers to a passenger car equipped with four doors for ingress/egress and a rear hatch opening for cargo (i.e., hinged above the backlight). The cargo area is not permanently partitioned from the passenger compartment area.

Station wagon (excluding van and truck based) refers to a passenger car with an enlarged cargo area. The entire roof covering the cargo area is generally equal in height from front to rear and full height side glass is installed between the C and D-pillars. The rearmost area is not permanently partitioned from the forward passenger compartment area (e.g., "horizontal window shades" to hide cargo do not constitute partitions).

Hatchback, number of doors unknown refers to a passenger car with an unknown number of doors for ingress/egress and a rear hatch opening for cargo (i.e., hinged above the backlight). The cargo area is not permanently partitioned from the passenger compartment area.

Other automobile type refers to any passenger car that cannot be described by other automobile attributes.

Unknown automobile type is used when it is known that the vehicle is a passenger car, but there is insufficient data to determine the type. Automobile Derivatives This describes certain passenger cars that have been modified to perform cargo-related tasks.

Auto based pickup refers to a passenger car based, pickup type vehicle (includes El Camino, Caballero, Ranchero, Brat, and Rabbit pickup). The roof area (and side glass) rearward of the front seats on a station wagon have been removed and converted into a pickup-type cargo box.

Auto based panel refers an automotive station wagon that may have sheet metal rearward of the B-pillar rather than glass (cargo station wagon, auto based ambulance/hearse).

Large limousine refers to an automobile that has sections added within its wheelbase (more than four side doors) or stretched chassis to increase length and passenger/cargo carrying capacity.

Three-wheel automobile or automobile derivative refers to three-wheel vehicles with an enclosed passenger compartment. Utility Vehicles (<=4,536 kgs GVWR) Multi-purpose vehicles (MPV) are designed to have off-road capabilities. These vehicles are generally four wheel drive (4 x 4), have increased ground clearance, and are equipped with a strong frame. Four wheel drive automobiles are not considered MPVs.

Form Screen Name: Body type

 Oracle Variable: VEHICLE.BODY_TYPE   877

Compact utility refers to a short wheelbase and narrow tracked multi-purpose vehicle designed to operate in rugged terrain (examples include: 4-Runner, Amigo, Bravada, Bronco [76 and before], Bronco II, Cherokee [84 and after], Defender, Discovery, Dispatcher, Explorer, Geo Tracker, Golden Eagle, Grand Vitara, Jeep CJ-2 - CJ-7, Laredo, Montero, Mountaineer, Navajo, Passport, Pathfinder, Raider, RAV4, RX-300, Renegade, Rocky, Rodeo, S-10 Blazer, S-15 Jimmy, Samurai, Scrambler, Sidekick, Sportage, Thing, Trooper, Trooper II, Wrangler, Xterra, X-90)

Large utility refers to full-size multi-purpose vehicles primarily designed around a shortened pickup truck chassis. While generally a station wagon style body, some models are equipped with a removable top (examples include: Bronco full-size [78 and after], full-size Blazer, full-size Jimmy, Hummer, Jeep Cherokee [83 and before], Durango, Escalade, Landcruiser, LX450, Navigator, Ramcharger, RangeRover, Scout, Tahoe, Trailduster, Yukon),

Utility station wagon refers primarily to a pickup truck based chassis enlarged to a station wagon (examples include: Chevrolet Suburban, Excursion, GMC Suburban, Travelall, Grand Wagoneer, includes suburban limousine) Utility, unknown body type is used when it is known that the vehicle is a utility vehicle, but there is insufficient data to determine the specific type. Class of Vehicle is entered as (Compact utility vehicle).

Van Based Light Trucks (<=4,536 kgs GVWR) Light trucks (<=4,536 kgs GVWR) are designed to maximize cargo/passenger area versus overall length. Basically a "box on wheels" these vehicles are identifiable by their enclosed cargo/passenger area and relatively short (or non-existent) hood.

Minivan refers to down-sized cargo or passenger vans examples include: Aerostar, Astro, Caravan, Expo Wagon, Grand Caravan, Grand Voyager, Lumina APV, Mazda MPV, Mini-Ram, Mitsubishi Minivan, Nissan Minivan, Odyssey, Previa, Quest, Safari, Sienna, Silhouette, Town and Country, Toyota Minivan, Toyota Van, Trans Sport, Vanagon/Camper, Venture, Villager, Vista, Voyager, Windstar)

Large van refers to a standard cargo or passenger van (examples include: B150-B350, Sportsman, Royal, Maxiwagon, Ram, Tradesman, Voyager [83 and before], E150-E350, Econoline, Clubwagon, Chateau, G10-G30, Chevy Van, Beauville, Sport Van, G15-G35, Rally Van, Vandura). These vans will generally have a larger capacity in both volume and GVWR.

Step van or walk-in van (<=4,536 kgs GVWR) refers to a multi-stop delivery vehicle with a GVWR less than or equal to 4,536 kilograms. Examples are the Grumman LLV used by the US Postal Service or the Aeromate manufactured by Utilimaster Motor Corporation.

Van based motorhome (<=4,536 kgs GVWR) refers to a van where the chassis and cab portions from the B-pillar forward of this vehicle are the same as in attributes minivan, large van, step van, however, a frame mounted recreational unit is added behind the driver/cab area. This attribute takes priority over attributes minivan and large van.

Van based school bus (<=4,536 kgs GVWR) is a passenger van designed to carry students (passengers) to and from educational facilities and/or related functions. The vehicles are characteristically painted yellow and clearly identified as school buses. Use this attribute regardless of whether the vehicle is owned by a school system or a private company. Van based school buses converted for other uses (e.g., church bus) also take this attribute.

Van based other bus (<=4,536 kgs GVWR) is a van derivative (e.g., taxi, small local transit) designed to carry passengers for low occupancy functions or purposes. Van based school buses do not use this attribute.

Other van type (Hi-Cube Van, Kary) refers to a cargo or delivery van where that chassis and cab portions from the B-pillar forward of this vehicle are the same as in Minivans and Large Vans with a frame mounted cargo area unit added behind the driver/cab area, or if the van cannot be described as a Minivan, Large Van, Step-van or a Van-based motorhome. Annotate the van type when using this attribute. This attribute takes priority over Minivans and Large Vans.

Unknown van type is used when it is known that this vehicle is a light van, but its specific type cannot be determined. Light Conventional Trucks (Pickup Style Cab, <=4,536 kgs GVWR) Light Conventional Trucks are used

Oracle Variable: VEHICLE.BODY_TYPE   877

to describe vehicles commonly referred to as pickup trucks and some of their derivatives. These light trucks are characteristically designed with a small cab containing a single row of seats (extended cabs with additional seats are available for some models), a large hood covering a conventional engine placement, and a separate open box area (approximately 180 to 240 centimeters long) for cargo.

Compact pickup is used to describe a pickup truck having a width of 178 centimeters or less. (Examples include: Arrow Pickup [foreign], Colt P/U, Courier, D50, Dakota, Datsun/Nissan Pickup, Frontier, Hombre, LUV, Mazda Pickup, Mitsubishi Pickup, Pup, Ram 50, Ranger, S-10, S-15, Sonoma, T-10, T-15, Tacoma, Toyota Pickup)

Large Pickup is used to describe a pickup truck having a width of greater than 178 centimeters (examples include: C10-C35, Comanche, D100-D350, F100-F350, Jeep Pickup, K10-K35, R100-R500, R10-R35, Ram Pickup, Sierra, Silverado, T100, V10-V35, W100-W350)

Pickup with slide-in camper is used to describe any pickup truck that is equipped with a slide-in camper. A slide-in camper is a unit that mounts within a pickup bed. Pickup bed caps, tonneau covers, or frame mounted campers are not applicable for this attribute.

Convertible pickup refers to a pickup truck equipped with a removable or retractable roof. To qualify for this attribute, the entire roof must open. Convertible roofs are generally fabric; however, removable hardtops are also included. This attribute takes priority over compact and large pickups.

Unknown pickup style light conventional truck is used when this vehicle is a Light Conventional Trucks, but there is insufficient data to determine the specific attribute.
Other Light Trucks (<=4,536 kgs. GVWR) Other Light Trucks are used to describe vehicles that are based upon a conventional light pickup frame, but a commercial or recreational body has been affixed to the frame rather than a pickup box.
Cab chassis based (includes rescue vehicles, light stake, dump, and tow truck) is used to describe a light vehicle with a pickup style cab and a commercial (non-pickup) body attached to the frame. Included are pickup based ambulances and tow trucks.
Truck based panel is used to describe a truck based station wagon that has sheet metal rather than glass above the beltline rearward of the B-pillars.

Light truck based motorhome (chassis mounted) is used to describe a frame mounted recreational unit attached to a light van or conventional chassis.

Other light conventional truck type is used for light conventional trucks that cannot be described elsewhere.

Unknown light truck type is used when it is known that the vehicle is a light truck chassis based vehicle but insufficient data exist to specify what type of light truck it is.

Unknown light vehicle type (automobile, utility, van, or light truck) is used when it is known that the vehicle is a light vehicle, but insufficient data exists to specify what type of light truck it is.

Buses (Excludes Van Based) Buses are defined as any medium/heavy motor vehicle designed primarily to transport large groups of passengers.

School bus (designed to carry students, not cross country or transit) is a bus designed to carry passengers to and from educational facilities and/or related functions. The vehicles are characteristically painted yellow and clearly identified as school buses. Use this attribute regardless of whether the vehicle is owned by a school system or a private company. School buses converted for other uses (e.g., church bus) also take this attribute.

Other bus type (e.g., transit, intercity, bus based motorhome) is a transport device designed to carry passengers for longer periods of time. These vehicles may be classified as over-the-road, transit, intercity, bus related motorhome (other than school bus based), or other.

Unknown bus type is used when it is known the transport device is a bus but there is insufficient data to choose between attributes School bus and Other bus type.

Form Screen Name: Body type

 Oracle Variable: VEHICLE.BODY_TYPE   877

Medium/Heavy Trucks (> 4,536 kgs GVWR) Medium/Heavy Trucks describe a single unit truck specifically designed for carrying cargo on the same chassis as the cab. They pertain to a truck-tractor designed for towing trailers or semi-trailers. Although towing is their primary purpose, some truck-tractors are equipped with cargo areas located rearward of the cab.

Step van (> 4,536 kgs GVWR) defines a single unit enclosed body with a GVWR greater than 4,536 kilograms and an integral driver's compartment and cargo area. Step vans are generally equipped with a folding driver seat mounted on a pedestal and a sliding door for easy ingress/egress.

Single unit straight truck (4,536 kgs <=GVWR <= 8,845 kgs) describes a non-articulated truck designed to carry cargo. The gross vehicle weight rating of the vehicle must exceed 4,536 kilograms and be less than or equal to 8,845 kilograms.

Single unit straight truck (8,845 kgs <= GVWR <= 11,793 kgs) describes a non-articulated truck designed to carry cargo. The gross vehicle weight rating of the vehicle must exceed 8,845 kilograms and be less than or equal to 11,793 kilograms.

Single unit straight truck (> 11,793 kgs GVWR) describes a non-articulated truck designed to transport cargo with a gross vehicle weight rating in excess of 11,793 kilograms. Use this attribute if it is known that the GVWR of a single unit straight truck is greater than 4,536 kilograms but there is insufficient data to specify the type of single unit truck

Single unit straight truck, GVWR unknown is used when the transport vehicle is a single unit straight truck but the GVWR is unknown.

Medium/heavy truck based motorhome describes a recreational vehicle mounted on a single unit medium/heavy truck chassis.

Truck-tractor with no cargo trailer describes a fifth wheel equipped tractor/trailer power unit with no trailer attached.

Truck-tractor pulling one trailer describes a fifth wheel equipped tractor (i.e., power unit of a tractor/trailer combination) pulling one semi-trailer.

Truck-tractor pulling two or more trailers describes a fifth wheel equipped tractor (i.e.,power unit of a tractor/trailer combination) pulling a semi-trailer plus one or more trailers. These additional trailers may be attached with a standard hitch or a converter dolly (for semi-trailers).

Truck-tractor (unknown if pulling trailer) is used when the vehicle is known to be a truck-tractor, but it is unknown if a trailer was being towed or if more than one trailer was being towed.

Unknown medium/heavy truck type is used when the only available information indicates a truck of medium/heavy size

Unknown truck type (light/medium/heavy) is used when it is known that this vehicle is a truck, but there is insufficient data to classify the vehicle further. Motored Cycles (Does Not Include All Terrain Vehicles/Cycles)

Motorcycle is used when the vehicle is a two-wheeled open (i.e., no enclosed body) vehicle propelled by an internal combustion engine. Motorcycles equipped with a side car also take this attribute.

Moped (motorized bicycle) is used when the vehicle is a motorized bicycle capable of moving either by pedaling or by an internal combustion engine.

Three-wheel motorcycle or moped is used when the vehicle is a three-wheeled open vehicle propelled by an internal combustion engine or a three-wheeled motorized bicycle capable of moving either by pedaling or by an internal combustion engine.

Form Screen Name: Body type

  Oracle Variable: VEHICLE.BODY_TYPE   877

Other motored cycle (minibike, motor scooter) is used when the vehicle in question does not qualify for attributes Motorcycles, moped, three wheeled motorcycle or moped (e.g., motor scooter).

Unknown motored cycle type is used when it is known that the vehicle is a motored cycle, but no further data is available. Other Vehicles Other Vehicles describe all motored vehicles that are designed primarily for off-road use.

ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle) is used for off-road recreational vehicles which cannot be licensed for use on public roadways. ATVs have 4 or more wheels and ATCs have 2 or 3 wheels. Generally, the tires have low pressure and wide profile (i.e., flotation/balloon).

Snowmobile refers to a vehicle designed to be operated over snow propelled by an internal combustion engine.

Farm equipment other than trucks refers to farming implements other than trucks propelled by an internal combustion engine (e.g., farm tractors, combines, etc.).

Construction equipment other than trucks refers to construction equipment other than trucks propelled by an internal combustion engine (e.g., bulldozer, road grader, etc.).

Other vehicle type is used when the motorized vehicle in question does not qualify for Construction equipment other than trucks, Farm equipment other than trucks, Snowmobile, ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle) (e.g., go-cart, dune buggy, "kit" car, etc.).

Unknown Vehicle Type Unknown Vehicle Type describes all motored vehicles where the body type cannot be differentiated among a light vehicle type, bus, medium/heavy truck, motored cycle, or any other motored vehicle type.

Unknown body type is used when there is no available information regarding the type of vehicle. This lack of information prohibits the accurate classification of this vehicle within one of the preceding attributes.

Range:

 Method: Select from appendix list _____

Sources:

        VEHICLE INSPECTION
        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name: **Class of Vehicle**   26

Oracle Variable: VEHICLE.HIT_CLASS   1266

Screen Name: Class of Vehicle

Form # - Name: 5 -

SAS Data Set:

SAS Variable:

Remarks:
    The Passenger Car Classification Subcommittee, A3B11(1), of the Transportation Research Board, Traffic Records and Accident Analysis Committee, A3B11, assessed size based on the vehicle wheelbase. The guidelines for this classification can be found in the report entitled Recommended Definitions for Passenger Car Size Classification by Wheelbase and Weight, August 1984 by the previously mentioned subcommittee. This variable is the same variable that appears in the Identification section of the General Vehicle Form.

Range:

Method: Select from appendix list _____

Sources:
       VEHICLE INSPECTION
       PAR

Form Screen Name: **Vehicle Identification Number**

Oracle Variable: VEHICLE.VIN   878

Screen Name: Vehicle Identification Number

Form # - Name: 6 -

SAS Data Set:

SAS Variable:

Remarks:

If a vehicle is inspected, if at all possible, the VIN must be obtained from the vehicle. If the VIN cannot be read from the cowl, door panel, glove box or trunk lid, then other sources may be used.

The PAR may be used to obtain a VIN when a vehicle inspection is not required (i.e., non-tow CDS applicable and WinSMASH is not applicable; or Body Category, equals Buses, Medium/Heavy Trucks, Motorcycles, or Other Vehicles. Enter the entire VIN; leave "blank" any column which does not have a VIN character.

If character of the VIN is missing or indecipherable, leave the column any such character would ordinarily occupy "blank".

Use VIN Assist, to check the VIN. Additionally, in NASSMAIN the VIN can be checked on the GV Form by going to Process / VIN Check Routine.

00000000000000000

Enter a "0" in each position for vehicles not required to have a VIN (e.g., go cart).

99999999999999999

if the entire VIN is unknown, or missing enter a "9" in each position.

If the vehicle is a motor home or school bus, the vehicle chassis VIN is coded and the secondary manufacturer's number should be annotated if indicated on the PAR.

If the vehicle is manufactured by the Ford Motor Company (prior to 1980) and the VIN begins or ends with a script, "F", the "F" is not entered. Proceed to the next character, as in the example below.

VIN: F 3 U 6 2 S 1 0 0 9 3 2 F

CODE: 3 U 6 2 S 1 0 0 9 3 2

In addition, if any hyphens, periods, or blank spaces are contained in the string of alphanumeric characters, ignore them as in the example below.

VIN: S M - E 3 0 7 6 4 2 1

CODE: S M E 3 0 7 6 4 2 1

Range:

Method: Enter VIN __ __ __ __ __ __ __ __ __ __ __

	Oracle Value	SAS Value
Element Attributes:		
9999 Unknown VIN - Fill all spaces with 9s	-9999	9999
If the entire VIN is unknown, or missing enter 99999999999999999		

Sources:

VEHICLE INSPECTION

PAR

Form Screen Name: **Dominant color**

Oracle Variable: VEHICLE.COLOR   1042

Screen Name: Dominant color

Form # - Name: 7 -

SAS Data Set:

SAS Variable:

Remarks:
    Enter the dominant color of the vehicle.

Range:

Method: Fill a single item

Element Attributes:		Oracle Value	SAS Value
1	Black	1	1
2	Charcoal gray	2	2
	Used for vehicles that are a dark gray.		
3	Light gray/silver	3	3
	Used for vehicles that are gray or silver. Does not include darks grays		
4	Brown	4	4
5	Gold/tan/copper	5	5
	Used for vehicles that are in the light brown family. Includes gold.		
6	Purple	6	6
	Used for vehicles that are dark or light purple.		
7	Dark blue	7	7
	Used for vehicles that are dark blue. Includes navy blue.		
8	Light blue	8	8
	Used for vehicles that are light blue. Includes electric blue.		
9	Dark green	9	9
	Used for vehicles that are dark green. Includes hunter/forest green.		
10	Light green	10	10
	Used for vehicles that are light green. Includes lime green.		
11	Maroon	11	11
	Used for vehicles that are much darker than red and have either a purple or a brown tint.		
12	Red	12	12
13	Orange	13	13
14	Yellow	14	14
15	White	15	15
16	Other (specify) :	16	16
9999	Unknown	-9999	9999
	The color could not be determined due to the vehicle burning, hit and run or other inability to inspect and determine color.		

Sources: VEHICLE INSPECTION
              PAR

Form Screen Name: **Inspection Type**

Oracle Variable: VEHICLE.INSPECTIONTYPE   1032

Screen Name: Inspection Type

Form # - Name: 8 -

SAS Data Set:

SAS Variable:

Remarks:
     This variable is designed to allow users to identify the level of documentation for each vehicle. It further identifies the timing and completeness of the data elements.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**

1   Completed at scene
   All field elements in the GV form were completed at scene. No followup
   visit(s) to gather any information was required.
	1	1

2   Complete - started at scene/completed later
   All field information was gathered from this vehicle. Unknowns were not
   coded for any variables. Some information, for example, make, model, color,
   body type, etc. were collected at the crash scene. Follow-up visit(s) were
   necessary to gather other information.
	2	2

3   Complete - not at scene
   The vehicle was not at the scene at the time the researcher arrived, left before
   the researcher could gather any information or there was an initial refusal by
   the driver or party responsible for the vehicle. All field information was
   gathered from this vehicle. Unknowns were not coded for any variables.
	3	3

4   Partial inspection - started at scene
   Some field information was not collected and Unknown was coded for at least
   one variable. Limited information, for example, make, model, color, body
   type, etc. were collected at the crash scene. Follow-up visit(s) were
   necessary to gather other information.
	4	4

5   Partial inspection - started later
   Some field information was not collected and Unknown was coded for at least
   one variable. The vehicle was not at the scene at the time the researcher
   arrived, left before the researcher could gather any information or there was
   an initial refusal by the driver or party responsible for the vehicle.
	5	5

6   Refusal
   The owner or party responsible for the vehicle refused any type of vehicle
   inspection, including pictures from any distance. Multiple attempts produced
   no results.
	6	6

7   Not inspected (specify reason) :
   The vehicle was not inspected for reasons other than direct refusal of the
   owner or parties responsible for the vehicle.
   These include:
   Hit and run vehicles not located by police or other agencies
   Vehicles removed from the scene and false information about driver/owner
   given to police.
	7	7

Form Screen Name: **Inspection Type**

 Oracle Variable: VEHICLE.INSPECTIONTYPE   1032

Sources:

        RESEARCHER ASSESSMENT

        REVIEWER ASSESSMENT

Form Screen Name: **Date of vehicle inspection**   31

 Oracle Variable: VEHICLE.INSPECTION_DATE   1040

 Screen Name: Date of vehicle inspection

 Form # - Name: 9 -

SAS Data Set:

SAS Variable:

Remarks:
    Inspection date - the date the inspection was begun. This does not count unsuccessful attempts to locate the vehicle.
    Some data must be collected from the vehicle.

Range:
    This date should roll up from the Contact log and not directly entered.

 Method: Enter Date ____ ____ - ____ ____ - ____

 Sources:
        SCENE INSPECTION

Form Screen Name: **Cargo weight**

Oracle Variable: VEHICLE.CARGO_WEIGHT   929

Screen Name: Cargo w eight

Form # - Name: 10 -

SAS Data Set:

SAS Variable:

Remarks:

Weight of cargo in or on vehicle - excluding occupants. Cargo is defined as loading that affects handling and stability. The effect on handling and stability will increase proportionally with the weight of the cargo and distance of objects from the CG.

An example is a bicycle roof rack with four bikes on top of an SUV. This object has great distance vertically from the CG but may not have great weight.

If Towed Trailing Unit, is Yes, towed trailing unit, then the weight of the trailer and its cargo is coded here.

Cargo may also be located in or on the passenger compartment area, cargo area, trunk bed of truck, etc. If there is no cargo then enter the value as zero.

Do not include the weight of the occupants as part of the cargo weight.   The occupant weight is listed in the occupant form.

Range:

Method: Enter pounds _____ lbs

	Oracle Value	SAS Value
Element Attributes:		
9999 Unknown Selected if the cargo weight is unknown or if it is unknown if there is cargo in the vehicle.	-9999	9999

Sources:

VEHICLE INSPECTION
DRIVER INTERVIEW
REVIEWER ASSESSMENT
RESEARCHER ASSESSMENT

Form Screen Name: **Special use**   33

Oracle Variable: VEHICLE.SPECIALUSE   879

Screen Name: Special use

Form # - Name: 11 -

SAS Data Set:

SAS Variable:

Remarks:

Vehicle special use for this trip-
Taxi, Vehicle used as school bus, and Vehicle used as other bus are "this trip" specific. The vehicle must be "on duty" as either a taxi or as a bus. External identification on the vehicle as a bus or taxi is not sufficient to determine its special use. Military, Police, Ambulance, and Fire truck or car are considered to be in use at all times.
Special use means "in use" and not necessarily emergency use. External identification to the normal driving public is the sole criterion.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No Special Use Used when no source indicates or implies that this vehicle was applicable to any of the special uses listed below.	1	1
2 Taxi Used when this vehicle was being used during this trip (at the time of the crash) on a "fee-for-hire" basis to transport persons. Most of these vehicles will be marked and formally registered as taxis; however, vehicles which are used as taxis, even though they are not registered (e.g., "Gypsy Cabs"), are included here. Taxis and drivers which are off-duty at the time of the crash are not included.	2	2
3 Vehicle used as a school bus Used if this motor vehicle (Body Type, need not equal School Bus) satisfies all of the following criteria: --externally identifiable to other traffic units as a school/pupil transport vehicle. The vehicle may be equipped with flashing lights and/or a sway stop arm, and traffic may be required to stop for the vehicle when occupants enter or exit; --operated, leased, owned, or contracted by a public or private school-type institution; --whose occupants, if any, are associated with the institution; and, --the vehicle is in operation at the time of the crash to and from the school or on a school-sponsored activity or trip.	3	3
4 Vehicle used as other bus Used when this motor vehicle is designed for transporting more than ten persons and does not satisfy all of the above criteria of a school bus.	4	4
5 Military Used for any vehicle which is owned by any of the Armed Forces regardless of body type. This attribute includes: -military police vehicles; -military ambulances; -military hearses; and -military fire vehicles	5	5

Form Screen Name: **Special use**   34

  Oracle Variable: VEHICLE.SPECIALUSE   879

		Oracle Value	SAS Value
Element Attributes:			

6   Police   6   6
Used for any readily identifiable (lights or markings) vehicle, which is owned by any local, county, state, or federal police agency. Vehicles not owned by the agency or not readily identifiable and are used by officers or agents (e.g., undercover) are excluded.

7   Ambulance   7   7
Used for any readily identifiable (lights or markings) vehicles: (1) whose sole purpose is to provide ambulance service, or (2) who serve the dual purposes of a hearse--used for funeral services, and an ambulance--used for emergency services. For these dual purpose vehicles (ambulance/hearse), use this attribute only when the vehicle is used as an ambulance.

8   Fire truck or car   8   8
Used for any readily identifiable (lights or markings) vehicle which is owned by any government (typically local) or cooperative agency for the purpose of fire protection. For volunteer fire companies, fire fighting apparatus and other vehicles owned by the company or government qualify for this attribute. Privately owned vehicles, which are not in authorized use, even if equipped with lights, do not qualify (the volunteer firefighter's vehicle).

9999   Unknown   -9999   9999
Used when no information is available to determine special use for this trip (e.g., a hit-and-run vehicle).

  Sources:

        DRIVER INTERVIEW
        VEHICLE INSPECTION
        SURROGATE INTERVIEW
        PAR

Form Screen Name: **Odometer reading**   35

  Oracle Variable: VEHICLE.ODOMETER   1044

  Screen Name: Odometer reading

  Form # - Name: 12 -

  SAS Data Set:

  SAS Variable:

  Remarks:

    Total mileage on odometer

  Range:

    Range 0 -- 600000 level 2
    750000 Level 1

  Method: Enter miles ___ ___ ___ ___ ___ ___

Element Attributes:	**Oracle Value**	**SAS Value**
8887 Unknown-Electronic Odometer	-8887	8887
Used when unable to read odometer-electronic display and no power to vehicle		
9999 Unknown	-9999	9999
Used when unable to determine mileage. Odometer not visible, destroyed. Interior of vehicle not accessible.		

  Sources:

      VEHICLE INSPECTION

Form Screen Name: **State periodic inspection sticker**   36

Oracle Variable: VEHICLE.STATE_INSP   947

Screen Name: State periodic inspection sticker

Form # - Name: 13 -

SAS Data Set:

SAS Variable:

Remarks:
   Examine the vehicle for presence of an inspection sticker. Do not confuse the inspection sicker with the registration
   sticker. If present, check the expiration date on the sticker.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Current The inspection sticker on the vehicle is not expired. Check the dates for valid period on the sticker.	1	1
2 Not current Inspection sticker present on the vehicle but is not valid due to expiration date passed or other reason.	2	2
3 Not present No inspection sticker present on the vehicle. The vehicle may not require a sticker (i.e. US government or state registration or some other reason).	3	3
9997 Not applicable This vehicle is not required to have a periodic inspection.	-9997	9997
9999 Unknown Unable to determine if this vehicle had or has an inspection sticker.	-9999	9999

Sources:
       VEHICLE INSPECTION
       PAR

Form Screen Name: **State vehicle registered in**   37

Oracle Variable: VEHICLE.STATE_REG   953

Screen Name: State vehicle registered in

Form # - Name: 14 -

SAS Data Set:

SAS Variable:

Remarks:

Examine the license plate and the sticker on the windshield (if present) to determine the registration state/territory/country

Range:

All states, territories, foreign countries

Method: Enter state abbr. _____

		Oracle Value	SAS Value
Element Attributes:			
9997 Not applicable		-9997	9997
Vehicle is not required to be registered. This will be extremely rare.			
9999 Unknown		-9999	9999
Select this attribute if the researcher cannot determine if the vehicle is registered or if the vehicle is required to be registered.			

Sources:

VEHICLE INSPECTION

PAR

Form Screen Name: **Event Number**   38

Oracle Variable: CDC.EVENT_NUMBER   1315

Screen Name: Event Number

Form # - Name: 15 -

SAS Data Set:

SAS Variable:

Remarks:

    The time rank of the event in the crash sequence.   This is precoded on the forms, the researcher should attempt to estimate the sequence of events as soon as possible in the investigation. The numbering of the vehicles is directly related to this number.

Range:

Method: Fill a single item

Element Attributes:		Oracle Value	SAS Value
1	Event # 1	1	1
2	Event # 2	2	2
3	Event # 3	3	3
4	Event # 4	4	4
5	Event # 5	5	5
6	Event # 6	6	6
7	Event # 7	7	7
8	Event #8	8	8
9	Event # 9	9	9
10	Event # 10	10	10
11	Event # 11	11	11
12	Event # 12	12	12
13	Event # 13	13	13
14	Event # 14	14	14
15	Event # 15	15	15
16	Event # 16	16	16
17	Event # 17	17	17
18	Event # 18	18	18
19	Event # 19	19	19
20	Event # 20	20	20
9999	Unknown	-9999	9999

    This could should never be used. In extreme circumstances, usually in a large, multivehicle crash, the possibility exists that events cannot be reconstructed.

Sources:

Form Screen Name: **Clock force direction**   39

Oracle Variable: CDC.CLOCK_FORCE   6163

Screen Name: Clock force direction

Form # - Name: 16 -

SAS Data Set:

SAS Variable:

Remarks:

    Clock direction of the principal direction of force determined by examining all available information on the vehicle, the scene and the occupant kinematics.

Range:

 Method: Enter a value _____

Element Attributes:	Oracle Value	SAS Value
1 01	1	1
2 02	2	2
3 03	3	3
4 04	4	4
5 05	5	5
6 06	6	6
7 07	7	7
8 08	8	8
9 09	9	9
10 10	10	10
11 11	11	11
12 12	12	12
13 13	13	13
99 99	99	99

 Sources:

        VEHICLE INSPECTION

Form Screen Name: **Deformation location**

Oracle Variable: CDC.DEFORMATIONLOCATION   6180

Screen Name: Deformation location

Form # - Name: 17 -

SAS Data Set:

SAS Variable:

Remarks:

Refer to the documents entitled: SAE J224MAR80 and "Collision Deformation Classification Training Program: Intermediate Level :Training/Reference Module", for detailed definitions of the CDC Element Attributes as well as instruction on proper usage for light vehicles.

Refer to the documents entitled: SAE J1301 for detailed definitions of the TDC Element Attributes as well as instruction on proper usage for medium/heavy trucks.

Range:

Method: Enter a value _____

Element Attributes:	**Oracle Value**	**SAS Value**
2 F Front	2	2
3 R Right Side	3	3
4 L Left Side	4	4
5 B Back (Rear)	5	5
6 T Top	6	6
7 U Undercarriage	7	7
8 9 Unknown	8	8
60 F Front	60	60
61 R Right Side	61	61
62 L Left Side	62	62
63 B Back of unit w/ cargo area	63	63
64 D Back - rear of tractor	64	64
65 C Rear of cab	65	65
66 V Front of cargo area	66	66
67 T Top	67	67
68 U Undercarriage	68	68
69 9 Unknown	69	69

Sources:

VEHICLE INSPECTION

Form Screen Name: **Longitudinal/lateral damage location**

Oracle Variable: CDC.LONGLATLOCATION   6176

Screen Name: Longitudinal/lateral damage location

Form # - Name: 18 -

SAS Data Set:

SAS Variable:

Remarks:

Refer to the documents entitled: SAE J224MAR80 and "Collision Deformation Classification Training Program: Intermediate Level :Training/Reference Module", for detailed definitions of the CDC Element Attributes as well as instruction on proper usage for light vehicles.

Refer to the documents entitled: SAE J1301 for detailed definitions of the TDC Element Attributes as well as instruction on proper usage for medium/heavy trucks.

Range:

Method: Enter a value _____

Element Attributes:	**Oracle Value**	**SAS Value**
9 D Distributed - side or end	9	9
10 L Left - front or rear	10	10
11 C Center - front or rear	11	11
12 R Right - front or rear	12	12
13 F Side Front - left or right	13	13
14 P Side center section L or R	14	14
15 B Side Rear - left or right	15	15
16 Y Side (F + P) OR End (L + C)	16	16
17 Z Side (P + B) OR End (C + R)	17	17
18 D Distributed - (F+P+B)	18	18
19 F Front Section	19	19
20 P Center Section	20	20
21 B Rear Section	21	21
22 Y Side Front/Center Section (F+P)	22	22
23 Z Side Center/Rear Section(P+B)	23	23
24 9 Unknown	24	24
59 9 Unknown	59	59
70 D Distributed - side or end	70	70
71 L Left - front or rear	71	71
72 C Center - front or rear	72	72
73 R Right - front or rear	73	73
74 F Side Front - front of windshield	74	74
75 P Side cab	75	75
76 W Side rear of cab to rear of tractor	76	76

Form Screen Name: **Longitudinal/lateral damage location**   42

  Oracle Variable: CDC.LONGLATLOCATION   6176

Element Attributes:		Oracle Value	SAS Value
77	K Side(P + W)	77	77
78	S Side(F + P + W)	78	78
79	B Side rear of cab to rear of trailer/cargo area	79	79
80	Y Side (F + P) OR End (L + C)	80	80
81	Z Side (P + B) OR End (C + R)	81	81
82	D Distributed - (F+P+B)	82	82
83	F Front Section	83	83
84	P Center Section	84	84
85	B Rear Section	85	85
86	Y Side Front/Center Section (F+P)	86	86
87	Z Side Center/Rear Section(P+B)	87	87
88	9 Unknown	88	88
89	9 Unknown	89	89
132	T Trailer	132	132
133	T Trailer	133	133

  Sources:

        VEHICLE INSPECTION

Form Screen Name: **Vertical/lateral damage location**

Oracle Variable: CDC.VERTLATLOCATION   6174

Screen Name: Vertical/lateral damage location

Form # - Name: 19 -

SAS Data Set:

SAS Variable:

Remarks:

Refer to the documents entitled: SAE J224MAR80 and "Collision Deformation Classification Training Program: Intermediate Level :Training/Reference Module", for detailed definitions of the CDC Element Attributes as well as instruction on proper usage for light vehicles.

Refer to the documents entitled: SAE J1301 for detailed definitions of the TDC Element Attributes as well as instruction on proper usage for medium/heavy trucks.

Range:

Method: Enter a value _____

Element Attributes:	**Oracle Value**	**SAS Value**
25 A All	25	25
26 H Top of frame to top	26	26
27 E Everything below belt line	27	27
28 G Belt line and above	28	28
29 M Middle -- top of frame to belt line or hood	29	29
30 L Frame -- top of frame, frame, bottom of frame	30	30
31 W Below undercarriage level (wheels and tires only)	31	31
32 9 Unknown	32	32
33 D Distributed	33	33
34 L Left	34	34
35 C Center	35	35
36 R Right	36	36
37 Y Left and Center (L+C)	37	37
38 Z Right and Center(R+C)	38	38
39 9 Unknown	39	39
91 A Top to Bottom of vehicle / no wheels	91	91
92 H Top of frame to top of vehicle	92	92
93 T Everything above cab	93	93
94 G Belt line and above	94	94
95 E belt line and below	95	95
96 M Middle -- top of frame to belt line or hood	96	96
97 L Low - top of frame, frame, and bottom of frame	97	97
98 W Below undercarriage level (wheels and tires only)	98	98
99 9 Unknown	99	99

Form Screen Name: **Vertical/lateral damage location**   44

  Oracle Variable: CDC.VERTLATLOCATION   6174

Element Attributes:	Oracle Value	SAS Value
100 D Distributed	100	100
101 L Left	101	101
102 C Center	102	102
103 R Right	103	103
104 Y Left and Center (L+C)	104	104
105 Z Right and Center(R+C)	105	105
106 9 Unknown	106	106
134 T Trailer	134	134
135 F Belt line/below on trailer	135	135
136 B Belt Line and above	136	136

  Sources:

        VEHICLE INSPECTION

Form Screen Name: Distribution   45

Oracle Variable: CDC.DAMAGEDISTRIBUTION   6170

Screen Name: Distribution

Form # - Name: 20 -

SAS Data Set:

SAS Variable:

Remarks:

> Refer to the documents entitled: SAE J224MAR80 and "Collision Deformation Classification Training Program: Intermediate Level :Training/Reference Module", for detailed definitions of the CDC Element Attributes as well as instruction on proper usage for light vehicles.
>
> Refer to the documents entitled: SAE J1301 for detailed definitions of the TDC Element Attributes as well as instruction on proper usage for medium/heavy trucks.

Range:

Method: Enter a value _____

Element Attributes:	**Oracle Value**	**SAS Value**
40 W Wide Impact Area	40	40
41 N Narrow Impact Area	41	41
42 S Sideswipe	42	42
43 O Rollover (include side)	43	43
44 A Overhanging Structure	44	44
45 E Corner	45	45
46 K Conversion in impact type	46	46
47 U No residual deformation	47	47
48 9 Unknowr	48	48
107 W Wide Impact Area	107	107
108 N Narrow Impact Area	108	108
109 S Sideswipe	109	109
110 O Rollover (include side)	110	110
111 A Overhanging Structure	111	111
112 E Corner	112	112
113 R Override	113	113
114 U No residual deformation	114	114
115 9 Unknowr	115	115

Sources:

> VEHICLE INSPECTION

Form Screen Name: **Extent**

Oracle Variable: CDC.DAMAGEEXTENT   6172

Screen Name: Extent

Form # - Name: 21 -

SAS Data Set:

SAS Variable:

Remarks:

Refer to the documents entitled: SAE J224MAR80 and "Collision Deformation Classification Training Program: Intermediate Level :Training/Reference Module", for detailed definitions of the CDC Element Attributes as well as instruction on proper usage for light vehicles.

Refer to the documents entitled: SAE J1301 for detailed definitions of the TDC Element Attributes as well as instruction on proper usage for medium/heavy trucks.

Range:

Method: Enter a value _____

Element Attributes:	**Oracle Value**	**SAS Value**
49 One	49	49
50 Two	50	50
51 Three	51	51
52 Four	52	52
53 Five	53	53
54 Six	54	54
55 Seven	55	55
56 Eight	56	56
57 Nine	57	57
58 Unknown	58	58
116 One	116	116
117 Two	117	117
118 Three	118	118
119 Four	119	119
120 Five	120	120
121 Six	121	121
122 Seven	122	122
123 Eight	123	123
124 Nine	124	124
125 0A	125	125
126 0B	126	126
127 0C	127	127
128 0D	128	128
129 0X	129	129

Form Screen Name: **Extent**

Oracle Variable: CDC.DAMAGEEXTENT   6172

Element Attributes:	Oracle Value	SAS Value
131 Unknown	131	131

Sources:

    VEHICLE INSPECTION

Form Screen Name: Location of this vehicle's first harmful event

Oracle Variable: VEHICLE.IMPACT_LOCATION_SCENE   803

Screen Name: Location of this vehicle's first harmful event

Form # - Name: 22 -

SAS Data Set:

SAS Variable:

Remarks:
   Location of this vehicle at the time of impact relative to original travel lane. This variable captures the position of the vehicle on the roadway relative to the travel lane at the beginning of the Critical Crash Envelope.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Original travel lane Stayed in or returned to the travel lane used at the beginning of the Critical Crash Envelope.	1	1
2 Different travel lane Moved predominantly or completely into a different travel lane than the travel lane used at the beginning of the Critical Crash Envelope.	2	2
3 Off roadway to right Completely exited the roadway to the right of the original travel lane.	3	3
4 Off roadway to left Completely exited the roadway to the left of the original travel lane.	4	4
5 Other (specify) : If the location of the vehicle does not fit the other definitions, specify in a short statement. If further explanation is necessary, please write in margin of form and right click to access annotation in the data entry program.	5	5
8888 No driver present	-8888	8888
9999 Unknown Unknown set of maneuvers for this vehicle.	-9999	9999

Sources:
   DRIVER INTERVIEW
   RESEARCHER ASSESSMENT
   REVIEWER ASSESSMENT

Form Screen Name: **First harmful event crash type**   49

Oracle Variable: VEHICLE.CRASH_TYPE   1379

Screen Name: First harmful event crash type

Form # - Name: 23 -

SAS Data Set:

SAS Variable:

Remarks:

The Crash Type is a numeric value assigned by selecting the Crash Category and the Crash Configuration. The number can be directly entered or edited here, however, the two-step process of selecting the Crash Category And Crash Configuration is preferred to visualize the crash scenario. The first harmful event may include a collision between a vehicle and some object, accompanied by property damage or human injury. The object may be another vehicle, a person, an animal, a fixed object, the road surface, or the ground. If the first collision is a rollover, the impact is with the ground or road surface. The collision may also involve plowing into soft ground, if severe vehicle deceleration results in damage or injury. A road departure without damage or injury is not defined as a harmful event.

To access the category choices double click on the white box next to Crash Type and the following window opens: Variables CrashType (Category) and Crash Type (Configuration); are used for categorizing the collisions of drivers involved in crashes.

To determine the proper crash type, refer to the three step decision process outlined below:

    Step 1 - Determine the appropriate Crash Category.
    Step 2 - Determine the appropriate Crash Configuration.
    Step 3 - Determine the specific Crash Type from the graphic icons .

The attributes for this variable are the categories. The configuration and specific crash type attributes are further discussed under variables Crash Configuration, and Crash Type.

The definitions of each of the six categories are as follows:

    --Single Driver - The first harmful event involves a collision between an in-transport vehicle and an object, or an off roadway rollover. A harmful event involving two in-transport vehicles is excluded from this category. Note, the impact location on the vehicle is not a consideration for crash types in this category.
    --Same Trafficway, Same Direction - The first harmful event occurred while both vehicles were traveling in the same direction on the same trafficway.
    --Same Trafficway, Opposite Direction - The first harmful event occurred while both vehicles were traveling in opposite directions on the same trafficway.
    --Change Trafficway, Vehicle Turning - The first harmful event occurred when the vehicle is either turning or merging while attempting to change from one trafficway to another trafficway. Trafficway for this variable is loosely defined to include driveways, alleys and parking lots when a vehicle is either entering or exiting a trafficway.
    --Intersecting Paths (Vehicle Damage)- The first harmful event involves situations where vehicle trajectories intersect. It is important to note the location of damage to each vehicle for crash typing. The location of damage to each vehicle is important to determine the correct crash type.
    --Miscellaneous - The first harmful event involves a crash type which cannot be described in the Categories above and thus is included in this category. Select this category, if there is insufficient information to choose between categories. Included are vehicles that are backing, third or subsequent vehicles involved in the crash, vehicles not involved in the first harmful event, U-turns, etc.

Each category is subdivided into crash configuration(s). The configurations are discussed below.

Category I. Single Driver

    Configurations A and B. Roadside Departure - The vehicle departs either the right or left side of roadway with the first harmful event occurring off the roadway. Right versus left is based on the side of the roadway departed immediately prior to the first harmful event.

    Configuration C. Forward Impact - The vehicle strikes an object on the roadway or off the end of a trafficway while moving forward.

Form Screen Name: First harmful event crash type

 Oracle Variable: VEHICLE.CRASH_TYPE   1379

Category II. Same Trafficway, Same Direction

    Configuration D. Rear-End - The front of the overtaking vehicle impacts the rear of the other vehicle. NOTE: Even if the rear-impacted vehicle starts to make a turn, code here (not in Category IV).

    Configuration E. Forward Impact - The front of the overtaking vehicle impacts the rear of the other vehicle, following a steering maneuver around a noninvolved vehicle or object.

    Configuration F. Sideswipe/Angle - The two vehicles are involved in a shallow, glancing impact involving the side of one or both vehicles. NOTE: CDC guidelines for sideswipes are not considered when assessing this configuration.

Category III. Same Trafficway, Opposite Direction

    Configuration G. Head-On - The frontal area of one vehicle impacts the frontal area of another.

    Configuration H. Forward Impact - The frontal area of one vehicle impacts the frontal area of another following a steering maneuver around a noninvolved vehicle or object.

    Configuration I. Sideswipe/Angle - The two vehicles are involved in a shallow, glancing impact involving the side of one or both vehicles.

Category IV. Changing Trafficway, Vehicle Turning

    Configuration J. Turn Into Path - The two vehicles are initially on the same trafficway when one vehicle tries to turn onto another trafficway and pulls in front of the other vehicle. Vehicles making a "U" turn are identified in Category VI. Miscellaneous.

    Configuration K. Turn Into Path - The two vehicles are initially on different trafficways when one attempts to turn into the same trafficway as the other vehicle. NOTE: The focus of this configuration is on the turning maneuver from one trafficway to another and not on the vehicles' plane of contact.

Category V. Intersecting Paths (Vehicle Damage)

    Configuration L. Straight Paths - The two vehicles are proceeding (or attempting to proceed) straight ahead.

Category VI. Miscellaneous

    Configuration M. Backing, Etc. - One of the two vehicles involved is a backing vehicle, regardless of its location on the trafficway or the damage location on the vehicles. Any crash configuration which cannot be described in Category I. through V. is included here.

The configurations are delineated into specific crash types. These types can be identified by referring to the crash type diagram in Figure 6.

The crash types in Category 1. (Single Driver) involve an impact between a vehicle and an object. Categories II. through VI. identify specific collision combinations which must be coded in specified pairs (i.e. the pair code defines the Crash Type). As an example, the combination Rear-end, stopped and Rear-end, specifics other or Rear-end, stopped and Slower, straight ahead are not valid since Rear-end, stopped only has meaning when linked to Stopped.

A crash involving a vehicle impacting a "driverless in-transport vehicle" is coded ...,specifics other in the appropriate configuration-category. For example, a vehicle which impacts the rear of a driverless in-transport vehicle is encoded Rear-end, specifics other.

Form Screen Name: **First harmful event crash type**   51

  Oracle Variable: VEHICLE.CRASH_TYPE   1379

In crashes involving more than two vehicles or in collision sequences involving a combination of vehicle-to-object-to-vehicle impacts, code the Crash Type for the vehicle(s) involved in the first harmful event. All other vehicles are coded Other crash type.

Keep in mind that intended actions play an important role in the coding scheme. For example, crash type Slower, turning left is selected over type Slower, straight ahead if the subject vehicle was traveling slower with intention of turning left. NOTE: The turning action need not have occurred prior to the collision. The driver's intent to turn is the key.

  Range:

  Method: Select from appendix list _____

	Element Attributes:	**Oracle Value**	**SAS Value**
1	No Impact Identifies non-collision events (fire, immersion, etc.). Rollovers on the road should be coded Other crash type.	-8888	8888
2	Right roadside departure, drive off road Used when the vehicle departs the road under a controlled situation (i.e., the driver was distracted, fell asleep, intentionally departed, etc.)	1	1
3	Right roadside departure, control/traction loss Used if there is some evidence that the vehicle loses traction or in some other manner "gets away" from the driver (i.e., the vehicle spins off the road as a result of surface conditions, oversteer phenomena, locked rakes or mechanical malfunctions). If doubt exists, code Right roadside departure, drive off road.	2	2
4	Right roadside departure; avoid collision with vehicle, pedestrian, anima Used when the vehicle departs the road as a result of avoiding something in the road. "Phantom" situations are included here.	3	3
5	Right roadside departure, specific other Used for any other stationary or non-stationary objects if the avoidance characteristics are present.	4	4
6	Specifics Unknowr The vehicle departed the right side of the road for unknown reasons	5	5
7	Left roadside departure, drive off road Used when the vehicle departs the road under a controlled situation (i.e., the driver was distracted, fell asleep, intentionally departed, etc.)	6	6
8	Left roadside departure, control/traction loss Used if there is some evidence that the vehicle loses traction or in some other manner "gets away" from the driver (i.e., the vehicle spins off the road as a result of surface conditions, oversteer phenomena, locked brakes or mechanical malfunctions). If doubt exists, code Left roadside departure, drive off road respectively.	7	7
9	Left roadside departure; avoid collision with vehicle, pedestrian, animal Used when the vehicle departs the road as a result of avoiding something in the road. "Phantom" situations are included here.	8	8
10	Left roadside departure, specifics other Used for any other stationary or non-stationary objects if the avoidance characteristics are present.	9	9
11	Specifics Unknowr	10	10

Form Screen Name: **First harmful event crash type**

  Oracle Variable: VEHICLE.CRASH_TYPE   1379

Element Attributes:	Oracle Value	SAS Value
The vehicle departed the left side of the road for unknown reasons		
12 Forward Impact, parked vehicle Involves an impact with a parked vehicle which can be located on either side of the road.	11	11
13 Forward impact, stationary object Involves an impact with an object that can be located on either side of the road. Includes a hole in the road, an overhead object (e.g., overpass) or an object projecting over the road edge (e.g., support column of elevated railway).	12	12
14 Forward Impact, pedestrian/animal Used when a pedestrian, non-motorist, or animal is involved with the first harmful event. Vehicle plane of contact is not a consideration.	13	13
15 End Departure The vehicle ran off the end of the road and crashed into something.	14	14
16 Forward Impact, Specifics Other Used for impacted (striking or struck) trains and non-stationary objects on the road.	15	15
17 Specifics Unknown The PAR indicates a single driver was involved in a forward impact collision, but no further classification is possible.	16	16
20 Rear-end: Stopped A vehicle that impacts another vehicle from the rear when the impacted vehicle was stopped in the trafficway.	20	20
21 Rear-end: Stopped, Straight A rear-impacted vehicle that was stopped in the trafficway, and was intending to proceed straight ahead.	21	21
22 Rear-end: Stopped, Left A rear-impacted vehicle that was stopped in the trafficway, intending to make a left turn.	22	22
23 Rear-end: Stopped, Right A rear-impacted vehicle that was stopped in the trafficway, intending to make a right turn.	23	23
24 Rear-end: Slower A vehicle that impacts another vehicle from the rear when the impacted vehicle was going slower than the striking vehicle.	24	24
25 Slower, Going Straight A rear-impacted vehicle that was going slower than the other vehicle while proceeding straight ahead.	25	25
26 Rear-end: Slower, Going Left A rear-impacted vehicle that was going slower than the other vehicle while intending to turn left.	26	26
27 Rear-end: Slower, Going Right A rear-impacted vehicle that was going slower than the other vehicle while intending to turn right.	27	27
28 Rear-end: Decelerating (Slowing) A vehicle impacts another vehicle from the rear when the impacted vehicle was slowing down.	28	28

Form Screen Name: First harmful event crash type   53

  Oracle Variable: VEHICLE.CRASH_TYPE   1379

		Oracle Value	SAS Value
Element Attributes:			
29	Rear-end: Decelerating (Slowing), Going Straight A rear-impacted vehicle that was slowing down while proceeding straight ahead.	29	29
30	Rear-end: Decelerating (Slowing), Going Left A rear-impacted vehicle that was slowng down while intending to turn left.	30	30
31	Rear-end: Decelerating (Slowing), Going Right A rear-impacted vehicle that was slowing down while intending to turn right.	31	31
32	Rear-end: Specifics Other For rear-end collisions which cannot be described in previous codes, enter Specifics Other for crashes involving a driverless in-transport vehicle.	32	32
33	Rear-end: Specifics Unknown The PAR indicates a rear-end collision occurred, but no further classification is possible.	33	33
34	Forward Impact: Control/Traction Loss A vehicle that's frontal area impacts another vehicle due to loss of control or traction (during a maneuver to avoid a collision with a nor-involved vehicle) while both are traveling on the same trafficway in the same direction.	34	34
35	Forward Impact: Control/Traction Loss A vehicle which is impacted by the frontal area of another vehicle due to loss of control or traction (during a maneuver to avoid a collision with a non-involved vehicle) while both are traveling on the same trafficway in the same direction.	35	35
36	Forward Impact: Control/Traction Loss A vehicle that's frontal area impacts another vehicle due to loss of control or traction (during a maneuver to avoid a collision with an object) while both are traveling on the same trafficway in the same direction.	36	36
37	Forward Impact: Control/Traction Loss A vehicle which is impacted by the frontal area of another vehicle due to loss of control or traction (during a maneuver to avoid a collision with an object) while both are traveling on the same trafficway in the same direction.	37	37
38	Forward Impact: Avoid Collision with Vehicle A vehicle that struck the rear of another vehicle with its front plane while maneuvering to avoid collision with a non-involved vehicle, when loss of control or traction was not a factor, and both were traveling on the same trafficway, in the same direction.	38	38
39	Forward Impact: Avoid Collision with Vehicle A vehicle that was impacted by the frontal area of another vehicle which was maneuvering to avoid a collision with a non-involved vehicle, when loss of control or traction was not a factor, and both were traveling on the same trafficway, in the same direction.	39	39
40	Forward Impact: Avoid Collision with Object A vehicle that struck the rear of another vehicle with its front plane while maneuvering to avoid collision with an object, when loss of control or traction was not a factor, and both were traveling on the same trafficway, in the same direction.	40	40

Form Screen Name: **First harmful event crash type**   54

 Oracle Variable: VEHICLE.CRASH_TYPE   1379

	Oracle Value	SAS Value
Element Attributes:		

| 41 Forward Impact: Avoid Collision with Object | 41 | 41 |

A vehicle which was impacted by the frontal area of another vehicle which was maneuvering to avoid a collision with an object, when loss of control or traction was not a factor, and both were traveling on the same trafficway, in the same direction.

| 42 Forward Impact: Specifics Other | 42 | 42 |

A forward impact collision which occurred while both vehicles were traveling on the same trafficway, in the same direction, and the striking vehicle was attempting to avoid a vehicle or an object which cannot be described by previous codes. Also, use this code for crashes involving a driverless in-transport vehicle which would otherwise qualify for this configuration

| 43 Forward Impact: Specifics Unknown | 43 | 43 |

Used when the PAR indicates that a forward impact collision occurred while both vehicles were traveling on the same trafficway and in the same direction, but no further classification was possible.

| 44 Sideswipe/Angle: Straight Ahead on Left | 44 | 44 |

Crash Configuration: Sideswipe/Angle

The two vehicles are involved in an impact involving the side of one or both vehicles. The following four codes, Sideswipe/Angle, straight ahead on left, Sideswipe/Angle, straight ahead on left/right, Sideswipe/Angle, changing lanes to the right, Sideswipe/Angle, changing lanes to the left, identify relative vehicle positions (left versus right) and lane of travel intentions (straight ahead versus changing lanes). From these four codes, four combinations are permitted. They are:
1. "44" and "45"
2. "46" and "45"
3. "45" and "47"
4. "46" and "47".

When used in combination, these codes refer to a sideswipe or angle collision which involved a vehicle to the left of a vehicle to the right where:
1. neither vehicle (codes "44" and "45") intended to change its lane;
2. the vehicle on the left (code "46") was changing lanes to the right, and the vehicle on the right (code "45") was not intending to change its lane;
3. the vehicle on the left (code "45") was not intending to change its lane, and the vehicle on the right (code "47") was changing lanes to the left; and
4. the vehicle on the left (code "46") was changing lanes to the right, and the vehicle on the right (code "47") was changing lanes to the left.

In addition, when:
1. the right sides of the two vehicles impact following a 180 degree rotation of the vehicle on the right, or
2. the left sides of the two vehicles impact following a 180 degree rotation of the vehicle on the left.
Select the appropriate combination depending upon:
- their positions (i.e., left versus right) and
- the intended lane of travel (straight ahead versus changing lanes) of their drivers.

Form Screen Name: First harmful event crash type   55

  Oracle Variable: VEHICLE.CRASH_TYPE   1379

		Oracle Value	SAS Value
Element Attributes:			
45	Sideswipe/Angle: Straight Ahead on Left/Right	45	45
	Crash Configuration: Sideswipe/Angle		

The two vehicles are involved in an impact involving the side of one or both vehicles. The following four codes, Sideswipe/Angle, straight ahead on left, Sideswipe/Angle, straight ahead on left/right, Sideswipe/Angle, changing lanes to the right, Sideswipe/Angle, changing lanes to the left, identify relative vehicle positions (left versus right) and lane of travel intentions (straight ahead versus changing lanes). From these four codes, four combinations are permitted. They are:
1. "44" and "45"
2. "46" and "45"
3. "45" and "47"
4. "46" and "47".

When used in combination, these codes refer to a sideswipe or angle collision which involved a vehicle to the left of a vehicle to the right where:
1. neither vehicle (codes "44" and "45") intended to change its lane;
2. the vehicle on the left (code "46") was changing lanes to the right, and the vehicle on the right (code "45") was not intending to change its lane;
3. the vehicle on the left (code "45") was not intending to change its lane, and the vehicle on the right (code "47") was changing lanes to the left; and
4. the vehicle on the left (code "46") was changing lanes to the right, and the vehicle on the right (code "47") was changing lanes to the left.

In addition, when:
1. the right sides of the two vehicles impact following a 180 degree rotation of the vehicle on the right, or
2. the left sides of the two vehicles impact following a 180 degree rotation of the vehicle on the left.
Select the appropriate combination depending upon:
- their positions (i.e., left versus right) and
- the intended lane of travel (straight ahead versus changing lanes) of their drivers.

Form Screen Name: **First harmful event crash type**   56

  Oracle Variable: VEHICLE.CRASH_TYPE   1379

	Oracle Value	SAS Value
Element Attributes:		
46 Sideswipe/Angle: Changing Lanes to the Right	46	46

Crash Configuration: Sideswipe/Angle

The two vehicles are involved in an impact involving the side of one or both vehicles. The following four codes, Sideswipe/Angle, straight ahead on left, Sideswipe/Angle, straight ahead on left/right, Sideswipe/Angle, changing lanes to the right, Sideswipe/Angle, changing lanes to the left, identify relative vehicle positions (left versus right) and lane of travel intentions (straight ahead versus changing lanes). From these four codes, four combinations are permitted. They are:
1. "44" and "45"
2. "46" and "45"
3. "45" and "47"
4. "46" and "47".

When used in combination, these codes refer to a sideswipe or angle collision which involved a vehicle to the left of a vehicle to the right where:
1. neither vehicle (codes "44" and "45") intended to change its lane;
2. the vehicle on the left (code "46") was changing lanes to the right, and the vehicle on the right (code "45") was not intending to change its lane;
3. the vehicle on the left (code "45") was not intending to change its lane, and the vehicle on the right (code "47") was changing lanes to the left; and
4. the vehicle on the left (code "46") was changing lanes to the right, and the vehicle on the right (code "47") was changing lanes to the left.

In addition, when:
1. the right sides of the two vehicles impact following a 180 degree rotation of the vehicle on the right, or
2. the left sides of the two vehicles impact following a 180 degree rotation of the vehicle on the left.
Select the appropriate combination depending upon:
- their positions (i.e., left versus right) and
- the intended lane of travel (straight ahead versus changing lanes) of their drivers.

Form Screen Name: **First harmful event crash type**   57

Oracle Variable: VEHICLE.CRASH_TYPE   1379

	Oracle Value	SAS Value
Element Attributes:		

47   Sideswipe/Angle: Changing Lanes to the Left   47   47
Crash Configuration: Sideswipe/Angle

The two vehicles are involved in an impact involving the side of one or both
vehicles. The following four codes, Sideswipe/Angle, straight ahead on left,
Sideswipe/Angle, straight ahead on left/right, Sideswipe/Angle, changing
lanes to the right, Sideswipe/Angle, changing lanes to the left, identify relative
vehicle positions (left versus right) and lane of travel intentions (straight ahead
versus changing lanes). From these four codes, four combinations are
permitted. They are:
1. "44" and "45"
2. "46" and "45"
3. "45" and "47"
4. "46" and "47".

When used in combination, these codes refer to a sideswipe or angle collision
which involved a vehicle to the left of a vehicle to the right where:
1. neither vehicle (codes "44" and "45") intended to change its lane;
2. the vehicle on the left (code "46") was changing lanes to the right, and the
vehicle on the right (code "45") was not intending to change its lane;
3. the vehicle on the left (code "45") was not intending to change its lane, and
the vehicle on the right (code "47") was changing lanes to the left; and
4. the vehicle on the left (code "46") was changing lanes to the right, and the
vehicle on the right (code "47") was changing lanes to the left.

In addition, when:
1. the right sides of the two vehicles impact following a 180 degree rotation of
the vehicle on the right, or
2. the left sides of the two vehicles impact following a 180 degree rotation of
the vehicle on the left.
Select the appropriate combination depending upon:
- their positions (i.e., left versus right) and
- the intended lane of travel (straight ahead versus changing lanes) of their
drivers.

48   Sideswipe/Angle: Specifics Other   48   48
Enter Sideswipe/angle: specifics other if one vehcle was behind the other
prior to a sideswipe/angle collision occurring while both vehicles were
traveling on the same trafficway and in the same direction. For example, use
this code when two vehicles are on the same trafficway and going the same
direction, and one loses control and is struck in the side by the front of the
other vehicle. However, if one vehicle rotates such that the impact is front to
front, then use code Other crash type. Use this code for crashes involving a
driverless in-transport vehicle.

49   Sideswipe/Angle: Specifics Unknowr   49   49
For sideswipe/angle collisions that occur while both vehicles are traveling on
the same trafficway and in the same direction, when no further classification is
possible.

50   Head-On: Lateral Move (Left/Right)   50   50
A vehicle that LEAVES ITS LANE [moves laterally (sideways)] immediately
before colliding head-on with another vehicle, when the vehicles are traveling
on the same trafficway in opposite directions.

51   Head-On: Lateral Move (Going Straight)   51   51

Form Screen Name: First harmful event crash type   58

   Oracle Variable: VEHICLE.CRASH_TYPE   1379

		Oracle Value	SAS Value
Element Attributes:	A vehicle that collides head-on with another vehicle which has IMMEDIATELY LEFT ITS LANE (moved laterally), when the vehicles are traveling on the same trafficway in opposite directions.		
52	Head-On: Specifics Other	52	52
	A head-on collision that cannot be described by previous codes, when the vehicles are traveling on the same trafficway in opposite directions. Clarification: Enter Head-on: Specifics other for both vehicles involved in a head-on collision when one is traveling the wrong way on a one way roadway. Enter Specifics Other for crashes involving a driverless in-transport vehicle.		
53	Head-On: Specifics Unknown	53	53
	The PAR indicates a head-on collision occurred between two vehicles traveling on the same trafficway in opposite directions, when no further classification is possible.		
54	Forward Impact: Control/Traction Loss	54	54
	A vehicle whose frontal area impacts another vehicle due to loss of control or traction (during a maneuver to avoid a collision with a third vehicle) while the vehicles are traveling on the same trafficway in opposite directions.		
55	Forward Impact: Control/Traction Loss	55	55
	A vehicle which is impacted by the frontal area of another vehicle due to loss of control or traction (during a maneuver to avoid a collision with a third vehicle) while the vehicles are traveling on the same trafficway in opposite directions.		
56	Forward Impact: Control/Traction Loss	56	56
	A vehicle whose frontal area impacts another vehicle due to loss of control or traction (during a maneuver to avoid a collision with an object) while the vehicles are traveling on the same trafficway in opposite directions		
57	Forward Impact: Control/Traction Loss	57	57
	A vehicle which is impacted by the frontal area of another vehicle due to loss of control or traction (during a maneuver to avoid a collision with an object) while the vehicles are traveling on the same trafficway in opposite directions.		
58	Forward Impact: Avoid Collision with Vehicle	58	58
	A vehicle whose frontal area impacts another vehicle while maneuvering to avoid a collision with a non-involved vehicle, when loss of control or traction was not a factor, and the vehicles were traveling on the same trafficway, in opposite directions.		
59	Forward Impact: Avoid Collision with Vehicle	59	59
	A vehicle which was impacted by the frontal area of another vehicle which was maneuvering to avoid collision with a non-involved vehicle, when loss of control or traction was not a factor, and the vehicles were traveling on the same trafficway, in opposite directions.		
60	Forward Impact: Avoid Collision with Object	60	60
	A vehicle that struck the front of another vehicle with the frontal plane while maneuvering to avoid collision with an object, when loss of control or traction was not a factor, and the vehicles were traveling on the same trafficway, in opposite directions.		

Form Screen Name: **First harmful event crash type**   59

   Oracle Variable: VEHICLE.CRASH_TYPE   1379

		Oracle Value	SAS Value
Element Attributes:			

61 Forward Impact: Avoid Collision with Object   **61**   **61**
   A vehicle which was impacted by the frontal area of another vehicle which
   was maneuvering to avoid collision with an object, when loss of control or
   traction was not a factor, and the vehicles were traveling on the same
   trafficway, in opposite directions.

62 Forward Impact: Specifics Other   **62**   **62**
   For forward impact collisions occurring while the vehicles were traveling on
   the same trafficway in opposite directions which cannot be described by
   previous codes. Enter Specifics Other for crashes involving a "driverless in-
   transport vehicle."

63 Forward Impact: Specifics Unknown   **63**   **63**
   The PAR indicates a forward impact collision occurred while the vehicles were
   traveling on the same trafficway in opposite directions, but no further
   classification is possible.

64 Sideswipe/Angle: Lateral Move (Left/Right)   **64**   **64**
   Identifies the vehicle which infringed upon the other vehicle in a Crash
   Category: Change Trafficway Opposite Direction, Crash Configuration:
   Sideswipe/Angle collision. Use this code for the vehicle which left its lane
   (moved laterally) leading to the collision.

65 Sideswipe/Angle: Lateral Move (Going Straight)   **65**   **65**
   The vehicle which was infringed upon by the other vehicle in a Crash
   Category: Change Trafficway Opposite Direction, Crash Configuration:
   Sideswipe/Angle collision.

66 Sideswipe/Angle: Specifics Other   **66**   **66**
   For sideswipe/angle collisions occurring while both vehicles were traveling on
   the same trafficway in opposite directions which cannot be described by "64"-
   "65". Enter Specifics Other for crashes involving a "driverless in-transport
   vehicle."

67 Sideswipe/Angle: Specifics Unknown   **67**   **67**
   The PAR indicates a sideswipe/angle collision occurred while both vehicles
   were traveling on the same trafficway in opposite directions, but no further
   classification is possible.

68 Turn Across Path: Initial Opposite Directions (Left/Right)   **68**   **68**
   Identifies the vehicle which turned across the path of another vehicle (code) in
   a Category IV, Configuration J collision, in which the vehicles were initially
   traveling in opposite directions.

69 Turn Across Path: Initial Opposite Directions (Going Straight)   **69**   **69**
   For a vehicle involved in a collision in which another vehicle (code "68" across
   its Path, and in which the vehicles were initially traveling in opposite
   directions.

70 Turn Across Path: Initial Same Directions (Turning Right)   **70**   **70**
   For a vehicle which turned right, across the path of another vehicle (code
   "71"), when both vehicles were initially traveling in the same direction.

71 Turn Across Path: Initial Same Directions (Going Straight)   **71**   **71**
   For a vehicle whose path was crossed by a vehicle turning right (code "70"),
   when both vehicles were initially traveling in the same direction.

72 Turn Across Path: Initial Same Directions (Turning Left)   **72**   **72**
   For a vehicle which turned left, across the path of another vehicle , when both
   vehicles were initially traveling in the same direction.

Form Screen Name: **First harmful event crash type**

  Oracle Variable: VEHICLE.CRASH_TYPE   1379

Element Attributes:	Oracle Value	SAS Value
73 Turn Across Path: Initial Same Directions (Going Straight) A vehicle whose path was crossed by a vehicle turning left, when both vehicles were initially traveling in the same direction.	73	73
74 Turn Across Path: Specifics Other For collisions in which one vehicle turned across another's path, which cannot be described by previous codes. Enter Specifics Other for crashes involving a driverless in-transport vehicle.	74	74
75 Turn Across Path: Specifics Unknowr The PAR indicates one vehicle turned across another's path, causing a collision, but no further classification is possible.	75	75
76 Turn Into Same Direction (Turning Left) For a vehicle which turned left, into the path of another vehicle, so that both vehicles were traveling in the same direction at the time of the collision.	76	76
77 Turn Into Same Direction (Going Straight) For a vehicle involved in a collision in which another vehicle turned left, into its path, so that both vehicles were traveling in the same direction at the time of the collision.	77	77
78 Turn Into Same Direction (Turning Right) For a vehicle which turned right, into the path of another vehicle, so that both vehicles were traveling in the same direction at the time of the collision.	78	78
79 Turn Into Same Direction (Going Straight) For a vehicle involved in a collision in which another vehicle turned right, into its path, so that both vehicles were traveling in the same direction at the time of the collision.	79	79
80 Turn Into Opposite Directions (Turning Right) For a vehicle which turned right, into the path of another vehicle, so that the vehicles were traveling in opposite directions at the time of the collision.	80	80
81 Turn Into Opposite Directions (Going Straight) For a vehicle involved in a collision in which another vehicle (code "80") turned right, into its path, so that the vehicles were traveling in opposite directions at the time of the collision.	81	81
82 Turn Into Opposite Directions (Turning Left) Enter for a vehicle which turned left, into the path of another vehicle, so that the vehicles were traveling in opposite directions at the time of the collision. This code is used when the driver's vehicle was in the act of making a left turn (e.g., from a driveway, parking lot or intersection). Do not confuse this situation with Crash Configuration: Straight Paths. The driver's intended path is the prime concern.	82	82
83 Turn Into Opposite Directions (Going Straight) For a vehicle involved in a collision in which another vehicle turned left, into its path, so that the vehicles were traveling in opposite directions at the time of the collision.	83	83
84 Turn Into Path: Specifics Other For collisions in which one vehicle turned across another's path, which cannot be described by previous codes. Enter Specifics Other for crashes involving a driverless in-transport vehicle.	84	84

Form Screen Name: **First harmful event crash type**   61

   Oracle Variable: VEHICLE.CRASH_TYPE   1379

Element Attributes:	**Oracle Value**	**SAS Value**
85 Turn Into Path: Specifics Unknown When the PAR indicates one vehicle turned into another's path, causing a collision, but no further classification is possible.	85	85
86 Straight Paths: Striking from the Right For a vehicle which strikes the right side of another vehicle from the right when both vehicles were going straight at the time of the collision.	86	86
87 Straight Paths: Struck on the Right For a vehicle which is struck on the right side by another vehicle from the right when both vehicles were going straight at the time of the collision.	87	87
88 Straight Paths: Striking from the Left For a vehicle which strikes another vehicle from the left when both vehicles were going straight at the time of the collision.	88	88
89 Straight Paths: Struck on the Left For a vehicle which is struck on the left side by another vehicle from the left when both vehicles were going straight at the time of the collision.	89	89
90 Straight Paths: Specifics Other For collisions in which two vehicles, both going straight, collide when their paths intersect, which cannot be described by previous codes. Enter Specifics Other for crashes involving a driverless in-transport vehicle.	90	90
91 Straight Paths: Specifics Unknown When the PAR indicates two vehicles, both going straight, collided when their paths intersected, but no further classification is possible.	91	91
92 Miscellaneous: Backing Vehicle For a backing vehicle which was involved with another vehicle or object.	92	92
93 Miscellaneous: Other Vehicle or Object For the vehicle which was involved with the backing vehicle.	98	98
99 Miscellaneous: Unknown Crash Type When the crash category or configuration is unknown.	99	99

   Sources:

      SCENE INSPECTION
      VEHICLE INSPECTION
      REVIEWER ASSESSMENT

Form Screen Name: Jackknife began

Oracle Variable: VEHICLE.JACKKNIFE   2271

Screen Name: Jackknife began

Form # - Name: 24 - (If applicable) Did your vehicle jackknife? When did it occur?

SAS Data Set:

SAS Variable:

Remarks:

   This variable captures if a jackknife occurred and if so, at what point in the crash sequence it occurred. Jackknife is coded regardless of vehicle damage. This means that any uncontrolled articulation of the vehicle and trailing unit is considered a jackknife and must be coded in this variable.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No Jackknife Used when no jackknife occurred.	1	1
2 Prior to first impact Used when the vehicle begins to jackknife prior to impact involvement.	2	2
3 Following first impact Used when the vehicle begins to jackknife more than 10 feet (3 m) after the impact location.	3	3
4 During impact (During impact) is used when the vehicle begins to jackknife either while engaged with the other vehicle/object or within a short distance of the impact location [i.e., less than 10 feet (3 m)].	4	4
8888 Not applicable Used when vehicle is not articulated (single unit vehicle).	-9997	9997
9999 Unknown Used when there is insufficient information to determine when or if the vehicle jackknifed.	-9999	9999

Sources:

            SCENE INSPECTION

Form Screen Name: **Exterior side mirror precrash presence**

Oracle Variable: MIRROR.SIDE_MIRROR   2123

Screen Name: Exterior side mirror precrash presence

Form # - Name: 25 -

SAS Data Set:

SAS Variable:

Remarks:

Determine if this vehicle had side mirrors present precrash. If no mirrors are present post crash, examine the vehicle carefully for mounting hardware, etc. Inspect the scene for mirrors or mounting hardware that may have belonged to this vehicle.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Yes, side mirror(s) present	1	1
Used when a side mirror(s) are present, whether OEM or aftermarket		
2 No, side mirror(s) not present	2	2
Used when no side mirrors are present		
9999 Unknown if side mirrors present	-9999	9
Used when the presence of side mirrors can not be determined.		

Sources:

RESEARCHER ASSESSMENT
DRIVER INTERVIEW
VEHICLE INSPECTION

Mirrors   64

Form Screen Name: **Location of exterior side view mirrors?**

Oracle Variable: MIRROR.SIDE_MIRROR_LOCATION   2115

Screen Name: Location of exterior side view mirrors?

Form # - Name: 26 -

SAS Data Set:

SAS Variable:

Remarks:
    Determine the location of the mirror(s) on the vehicle.

Range:

Method: Fill a single item

			Oracle Value	SAS Value
Element Attributes:				
1	Mounted on door		1	1
	The exterior mirror is mounted on the door surface or pillars			
2	Mounted on fender		2	2
	The exterior mirror is mounted on the fender surface.			
8	Other location (specify) :		8	8
	The mirror is attached to a location other than the exterior door or fender surface of the vehicle. Specify in a short statement. If the specify statement is longer than the box allows, annotate in the margin of the form and use the right click function in the data entry program.			
9997	Not applicable (No mirrors)		-9997	9997
9999	Unknown location of mirror		-9999	9999

Sources:
         RESEARCHER ASSESSMENT
         DRIVER INTERVIEW
         VEHICLE INSPECTION

Form Screen Name: **Exterior side mirror type**

Oracle Variable: MIRROR.SIDE_MIRROR_TYPE   2132

Screen Name: Exterior side mirror type

Form # - Name: 27 -

SAS Data Set:

SAS Variable:

Remarks:
   Determine the type of side mirror lens. Convex mirrors may or may not have an obvious outward curve to the glass surface. However, the image in the mirror will be a reduction in size from one seen in a mirror with a flat surface.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Flat Mirror Mirror which returns the exact image of the environment.	1	1
2 Convex Mirror Mirror which has a curved surface and returns an enlarged view of the environment (appears farther away).	2	2
3 Convex/Plain combination Generally this is a flat large mirror with a small convex mirror to provide a larger view.	3	3
4 Other (specify) : Specify the mirror type if it does not fit the description of convex or flat. If the specify statement is longer than the box allows, annotate in the margin of the form and use the right click function in the data entry program.	4	4
9 Mirror present, type unknown Use this code if the mirror mount or some indication that a mirror was present, precrash, but the type cannot be determined.	9	9
9997 Not applicable (No mirrors) The vehicle has no exterior mirrors. This will be extremely rare.	-9997	9997
9999 Unknown Use this code if the researcher cannot determine if the vehicle has exterior mirrors.	-9999	9999

Sources:
   RESEARCHER ASSESSMENT
   DRIVER INTERVIEW
   REVIEWER ASSESSMENT
   VEHICLE INSPECTION

Form Screen Name: **Exterior side mirror origin**

Oracle Variable: MIRROR.SIDE_MIRROR_ORIGIN   2128

Screen Name: Exterior side mirror origin

Form # - Name: 28 -

SAS Data Set:

SAS Variable:

Remarks:
   Indicates the origin of the side mirror, whether it is an Original Equipment Manufacturer (OEM) or an aftermarket piece of equipment.

Range:

Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	OEM side mirror	1	1
	Used when the was manufactured with this type of mirror.		
2	After market side mirror	2	2
	Used when the mirror(s) were installed on the vehicle after it left the factory. One example is the installation of large mirrors with extendable brackets to assist in the view when hauling a trailer.		
9	Unknown OEM/after market	9	9
	Used when the researcher is unable to identify the origin of side mirror(s)		
9997	Not applicable (No mirrors)	-9997	9997
	Use this attribute when there is no indication on the vehicle that there were ever any exterior mirrors. This should be an extremely rare occurrence.		
9999	Unknown	-9999	9999

Sources:
   RESEARCHER ASSESSMENT
   DRIVER INTERVIEW
   REVIEWER ASSESSMENT
   VEHICLE INSPECTION

Form Screen Name: **Type Of Equipment In/On Vehicle**

Oracle Variable: EQUIPMENT.EQUIP_TYPE   956

Screen Name: Type Of Equipment In/On Vehicle

Form # - Name: 29 -

SAS Data Set:

SAS Variable:

Remarks:

This variable is designed to assemble a list of the equipment in the vehicle under consideration. Examine the vehicle carefully, including the owner's manual to determine equipment presence.

Range:

Method: Check or Enter Value in Box

	Element Attributes:	**Oracle Value**	**SAS Value**
	Safety		
1	Rear crash avoidance (other than camera)	1	1
	This feature provides warning and possibly vehicle action when the device determines a crash is possible. This device uses sonar, radar or laser technology to measure the distance to the object and closing speed. This attribute is coded for devices warning of objects to the REAR of this vehicle.		
4	Mirror mounted turn signals	4	1
	Arrows or other symbols integrated into the exterior mirrors, which iluminate when, the turn signal or hazard flasher are activated.		
8	Run-flat tires	8	2
	Tires termed run-flat or similar employ two different designs presently. One is a reinforced sidewall to maintain the tire shape and temporarily carry the weight of the vehicle in the event of a sudden loss of air pressure. The self-supporting system of run-flat tires is the one currently in greatest use by other tire makers as well as Goodyear. The Dunlop SP Sport, Goodrich Comp T/A and Michelin ZP (for "zero pressure) are examples.		
	Another system called PAX, under development by Michelin in conjunction with other tire makers, has some advantages over the self-supporting tire. The support system for the PAX is built into the wheel itself. It is thus considerably more costly at this stage but it permits the modern ultra-low profile tire with larger wheel diameter popular with modern designers. It also has less rolling resistance and is thus "greener" requiring less fuel to keep it going.		
14	Tire pressure monitoring system	14	3
	This system monitors the tire pressure. The process may be direct or indirect. Direct systems employ pressure sensors in each wheel that report pressure via radio link to vehicle command center. Indirect uses the antilock wheel RPM readers to determine differences in the rotation rates of the wheels. Significant differences between front and rear axles (or left and right side, depending upon the algorithm) trigger a warning of low tire pressure. . Look for a warning lamp to illuminate during the bulb check, or for actual tire pressure readings in the driver information center or even in the rearview mirror.		
18	Wide angle mirror	18	4

Form Screen Name: **Type Of Equipment In/On Vehicle**   68

  Oracle Variable: EQUIPMENT.EQUIP_TYPE   956

Element Attributes:	**Oracle Value**	**SAS Value**
This type of mirror is generally mounted in place of the standard interior rear view mirror. It provided a wider view of the area to the rear of the vehicle including the "blind spots" along the sides of the vehicle.		
24 Pet/cargo barrier	24	5
Mesh or solid barrier used to isolate pets or cargo from the driver's area. These can be permanent or temporary attachments to the vehicle.		
25 Auto dimming rearview mirror(s)	25	5
Sensors in the rearview mirrors compare the intensity of light reflected in the mirror with that of the surrounding light. A large difference indicates glare, which is then reduced automatically by changing the mirror's reflectivity. This is accomplished by changing the electrical current being sent to an electrochromic element in the mirror (which is similar to a liquid-crystal display in a digital watch).		
31 Collision warning system	31	8
Devices that warn of high closing speeds and proximity of other vehicles or objects . Provides audible warnings and may provide engine rpm reduction and/or braking. A device developed to prevent vehicle-to-vehicle collisions is the protective envelope. This warns of other vehicles within a certain proximity to the vehicle with the sensor. Visteon has been developing the smart radar "cocoon" which surrounds the vehicle with programmable sense zones that are used for adaptive cruise control, side-object warning and a lane change aid.		
34 Lane or roadway-departure warning system	34	9

Form Screen Name: **Type Of Equipment In/On Vehicle**   69

   Oracle Variable: EQUIPMENT.EQUIP_TYPE   956

		Oracle Value	SAS Value

   Element Attributes:

Warns the driver of lane or roadway departure. There are several systems under development. Infiniti is definitely equipped with one as an option. Infiniti's system uses a small camera, a speed sensor, an indicator and an audible warning buzzer to let drivers know the vehicle has drifted out of its lane.

The markings and vehicle speed are sent to the system's microprocessing unit, which combines the information to calculate the distance between the vehicle and the lane marking and the vehicle's lateral velocity to the marking. The system uses the information to make a judgment as to whether the vehicle is moving out of the lane.

If it appears that the vehicle is leaving the lane, the warning signals come on to alert the driver to take corrective action. The system will not operate if the camera can't detect the lane markers or if the vehicle's speed is below 45 miles per hour.

A commercial product that grew out of the 1999 Run-Off-Road Study, the SafeTRAC which is a forward-looking video camera which that tracks a vehicle's position in its lane. SafeTRAC generates a warning if a vehicle begins to drift out of its lane. SafeTRAC is currently available as an aftermarket device for all vehicles.   During vehicle inspection, look for a display that may be mounted on the dash or embedded in the instrument panel. It may also interface with an existing driver information center. The system is comprised of a windshield mounted camera and a driver interface which attaches to the vehicle and is powered by the cigarette lighter. It has been commercially available since early 2000, but has not been widely adopted. SafeTRAC is currently used in GM/NHTSA collision avoidance program for lane tracking. It is available as a factory option in Kenworth Trucks and Volvo is also using it in the US Army's 21st century truck.

		Oracle Value	SAS Value
36	Cruise control-adaptive/intelligent	36	10

Adaptive (or intelligent) cruise control is similar to conventional cruise control in that it maintains the vehicle's pre-set speed. However, unlike conventional cruise control, this new system can automatically adjust speed in order to maintain a proper distance between vehicles in the same lane. This is achieved through a radar headway sensor, digital signal processor and longitudinal controller. If the lead vehicle slows down, or if another object is detected, the system sends a signal to the engine or braking system to decelerate. Then, when the road is clear, the system will re-accelerate the vehicle back to the set speed.

		Oracle Value	SAS Value
38	Drowsy driver sensing system	38	11

Form Screen Name: Type Of Equipment In/On Vehicle

 Oracle Variable: EQUIPMENT.EQUIP_TYPE   956

		Oracle Value	SAS Value

Element Attributes:

There are several of these devices on the market and in vehicles at this time. Some examples are given in the following paragraphs. Examine the vehicle for cameras and other devices pointed at the driver. If in doubt document and call the Zone Center.

The first example is SafeTRAC which is a forward-looking video camera that tracks a vehicle's position in its lane. SafeTRAC generates a warning if a vehicle begins to drift out of its lane. SafeTRAC is currently available as an aftermarket device for all vehicles.   During vehicle inspection, look for a display that may be mounted on the dash or embedded in the instrument panel. It may also interface with an existing driver information center

The second example is Hypovigilance Diagnosis Module which detects and diagnoses driver hypo-vigilance in real-time. Based on an artificial intelligence algorithm this module will fuse data from on-board driver monitoring sensors (eyelid behaviour and steering grip forces) and data regarding the driver's behaviour (lane keeping performance). The goal is to achieve a (correct) diagnosis level of 90% and a false alarm rate below 1 % in all highway scenarios.
Therefore, parts of the HDM are personalised by using a smart card application. If the driver is unknown to the system it will monitor awake driving at the beginning of the trip and use the information for delivering its diagnoses later on.

The third example is the Copilot. It is a device to accurately detect and track human drowsiness and provide a warning to the driver. The Copilot provides a continuous real time measurement of eye position and eyelid closure. A direct measurement of drowsiness is calculated from the analysis of slow eyelid closures. In particular the Copilot calculates PERCLOS or percent eye closure, simply defined as the proportion of time the eyes are closed over a specified time interval. The Copilot provides a visual gauge representing the driver's drowsiness level and an audible warning when a preset drowsiness threshold is reached.

		Oracle Value	SAS Value
102	Bi-Xenon Headlamps High and low beam more closely approximates the natural day light for enhanced clarity	102	102
1088	Other safety equip. (specify) : This attribute should be used only if the researcher finds equipment in the vehicle not listed in any of the categories. The equipment must be related to some safety aspect such as improving the quality of the driving, warning the driver of impending danger, etc.	1088	88

Convenience

		Oracle Value	SAS Value
5	DVD player - 1st row DVD player installed in the first seat row of the vehicle	5	1
7	Radar or laser detector Use when the vehicle has a device for detecting laser or radar speed monitoring devices used by police.	7	2
10	DVD player - 2nd row DVD player installed in the second seat row of the vehicle.	10	2
15	Tinted windows	15	3

Form Screen Name: **Type Of Equipment In/On Vehicle**   71

   Oracle Variable: EQUIPMENT.EQUIP_TYPE   956

Element Attributes:	**Oracle Value**	**SAS Value**
Side, backlight or roof glass that has a distinct tint. Most windows have some tint from the factory. Generally, this tinting can be noted on the glass type or the windows will have a tinted plastic layer applied to the inside surface.		
17 Headlight wiper/washer	17	4
These will be obvious. Wipers are mounted close to the headlights. Makes with known installations (optional) are Mercedes, Saab, Volvo and Ford. If the front end is damaged, examine the headlight area for the wiper mount.		
21 Adjustable pedals	21	5
All control pedals (accelerator, brake) move longitudinally between firewall and driver There is generally a range of approximately three inches from the point closest to the firewall to the point closest to the seat. This change in distance from the firewall allows the driver to sit at a greater distance from the steering wheel.		
22 Clothes rod	22	5
An aftermarket device normally placed in the rear seat of a vehicle to hang clothes.		
23 Cellular/mobile phone	23	5
28 Sport Shift transmission	28	6
Also known as Manual Automatic Transmission, Sport Shift is a method by which the driver of a vehicle can control what gear is used with the touch of a button. Generally, a car with Sport Shift can be set to full automatic transmission for stop and go traffic and then switched over to "manual" mode when the driver have more control of the system.		
29 Steering wheel mounted radio/climate controls	29	7
Steering wheel mounted controls that permit the driver to operate or-board devices without removing hands from the steering wheel.		
30 Window wind deflector	30	7
Device that attaches to the top and/or front of the side windows and deflects the airflow away from the vehicle. This deflection reduces the wind noise and airflow into the vehicle.		
32 Rear spoiler	32	8
Rear mounted spoiler, theoretically provides more vehicle stability at higher speeds		
33 Bug shield /hood protector	33	8
This device is a piece of plastic or vinyl, which is fitted to the front of a vehicle. It is designed to protect the paint and grillwork form impacts with bugs, gravel and other small airborne objects. It is also known as car bra, car mask, front-end cover, hood bra or car bug shield.		
35 Satellite radio	35	9
Radio programming from satellite link such as Sirius. Driver query will probably be necessary for this attribute.		
37 Sunroof	37	10
Sunroof" is the generic term used to describe an operable panel in a vehicle roof that can let in light and/or air. "Moonroof" is a term created by Ford in the 70s, yet is now used generically to describe the glass panel vehicle roofs or in the center of electric sunroofs.		
39 Child mirror	39	11

Form Screen Name: **Type Of Equipment In/On Vehicle**   72

Oracle Variable: EQUIPMENT.EQUIP_TYPE   956

		Oracle Value	SAS Value
Element Attributes:	A second "rear view mirror" that is angled to look specifically at the full width of rear seat.		
41	Hands Free Cell Phone Kit	41	12
	After market device that helps the user operate the cell phone without holding the phone in either hand. This can be an earpiece with microphore, headset or a cradle type holder for the phone.		
43	Non-standard steering wheel	43	12
	Steering wheel which appears to be other than OEM. Do not code this attribute for leather covering, etc. This attribute is intended to capture welded chain, small diameter, wood, etc.		
44	Voice activated controls	44	13
	Vehicle system which interprets audible commands from occupants, generally the driver, to operate various vehicle controls, such as the climate, radio or cell phone.		
50	Large Speakers	50	17
	Speakers larger than the OEM type. Generally, these speakers will be in the backlight deck or may be external.		
90	Cruise control-conventional	90	90
	Cruise control actuates the throttle valve by a cable connected to an actuator, instead of by pressing a pedal. The throttle valve controls the power and speed of the engine by limiting how much air the engine takes in. When the cruise control is engaged, the actuator moves the cable connected to the pivot, which adjusts the throttle; but it also pulls on the cable that is connected to the gas pedal -- this is why your pedal moves up and down when the cruise control is engaged. The brain of a cruise control system is a small computer that is normally found under the hood or behind the dashboard. It connects to the throttle control seen in the previous section, as well as several sensors. The diagram below shows the inputs and outputs of a typical cruise control system. A good cruise control system accelerates aggressively to the desired speed without overshooting, and then maintains that speed with little deviation no matter how much weight is in the car, or how steep the hill you drive up.		
101	Integrated Hands Free Communication System	101	101
	Once the phone is docked in the armrest cradle, it is connected to the vehicles integrated antenna system. Phone directory can be displayed on the dashboard and calls can be made using buttons on steering wheel. Calls are delivered through car's audio system.		
4088	Other convenience (specify) :	4088	8888
	Use this attribute for convenience items used to ease the driving task or use of the vehicle for the driver or passengers. Use this for items which cannot be classified in any of the other attributes in this category. Specify the name and function of the equipment.		
Other			
91	Power hand controls	91	91
	Power operated controls used by the driver as a substitute for any aspect of vehicle operation. These controls will be small levers, buttons or similar devices. These controls have power assist mechanism associated with the operation. In other words, there is no direct mechanical link between the control and the functional lever (brake, accelerator, etc) which controls the vehicle.		

Form Screen Name: Type Of Equipment In/On Vehicle   73

 Oracle Variable: EQUIPMENT.EQUIP_TYPE   956

Element Attributes:	Oracle Value	SAS Value
92 Manual hand controls Hand operated controls used by the driver as a substitute for foot controls. These controls will be levers, handles or similar devices attached to the steering column or other location within easy reach of the drivers hands. These controls have no power assist associated with the operation.	92	92
93 Other adaptive equipment Use this attribute for items not related to the operation of the vehicle but which help drivers with disabilities enter, exit or otherwise use the vehicle.	93	93

Braking and Handling

	Oracle Value	SAS Value
2 ABS The anti-lock braking system (ABS) prevents the wheels from locking up during braking. Even under strong braking, the driver can better control and steer the car, potentially avoiding obstacles without having to release the brakes first. When ABS is activated, the driver will notice a slight pulsation of the brake pedal.	2	1
6 Variable suspension Suspension which electronically monitors and adapts the suspension damping and steering to ensure optimal handling and ride depending on the driving conditions. There may be several modes such as a sports mode which gives a more active and engaging driving feel.	6	2
12 Electronic stability control Electronic Stability Control or ESC uses the speed sensors on each wheel and the ability to brake individual wheels that are the basis of antilock brakes. ESC or electronic stability control is an extension of antilock brake technology, which has speed sensors and independent braking for each wheel. A control unit monitors when the steering and rotation sensors detect that the vehicle is about to travel in a direction different from the one indicated by the steering wheel position. Then ESC automatically brakes the appropriate wheel to help the driver maintain the control. In many cases engine throttle also is reduced. It is known by many names: VSA (Vehicle Stability Assist) (Acura, Honda); ESP (Electronic Stability Program) (Audi, Chrysler, Mercedes-Benz, Saab, Volkswagen); DSC (Dynamic Stability Control) (BMW, Jaguar, Land Rover); Stabilitrak (Buick, Cadillac, Pontiac); Active Handling System (Chevrolet); AdvanceTrac (Ford, Lincoln, Mercury); VDC (Vehicle Dynamic control) (Infiniti, Nissan, Subaru); VSC (Vehicle Stability Control) (Lexus, Toyota); Precision Control System (Oldsmobile); PSM (Porsche Stability Management) (Porsche); DSTC (Dynamic Stability Traction Control) (Volvo)	12	3
16 Traction Control A Traction Control System uses the wheel's anti lock brake system to monitor the rotational speed of each wheel. When wheel-slippage is detected at any wheel (higher rotational speed), it pulses the brakes until traction is regained and all four wheels are again traveling at the same speed.	16	4
20 Electronic brake assist	20	5

Form Screen Name: Type Of Equipment In/On Vehicle   74

 Oracle Variable: EQUIPMENT.EQUIP_TYPE   956

	Oracle Value	SAS Value

 Element Attributes:

Brake Assist recognizes a driver's intent to perform a sudden stop by monitoring the rate of the brake application and initiates full braking within a fraction of a second, reducing the car's braking distance by as much as 20 percent

Continental Brake Assist System is on the Ford Expedition and the Ford Taurus.

Bosch--'Predictive Brake Assist', helps drivers in the event of an imminent accident by preparing the brake system for emergency braking. While unnoticed by the driver, Predictive Brake Assist builds up preventive brake pressure by placing the braking pads on the brake disks as a matter of precaution and setting the hydraulic brake assistant into a state of 'alert'. If the driver actually brakes, he gets the fastest possible brake response with optimal deceleration values and the shortest possible stopping distance. When there is no braking action, the alert status is simply cancelled. The Predictive Brake Assist will be installed for the first time worldwide as additional function of the Adaptive Cruise Control (ACC) system in the new Audi A6.

A description of the system operation:
Conventional braking systems usually use engine vacuum to increase braking capability. Instead of relying solely on vacuum power to provide effective brakes, an electric pump pressurizes brake fluid to provide power assist for emergency braking
Most drivers, under normal braking conditions as well as under emergency conditions, start out with little brake pressure and whenever necessary they will increase their pedal effort. In an emergency this behavior leads many times to a crash since the car could not be stopped in time. Those situations require maximum pedal pressure from the beginning - if necessary the effort can be reduced later in the process.

With other words most drivers do not use the ability of the brakes to their advantage - BAS automatically corrects that. The system recognizes emergency situations within milli seconds and releases pressurized brake fluid into the system as soon as the driver touches the brake pedal. As soon as the driver releases the brake pedal, BAS kicks back into a standby mode.

BAS creates a much higher stopping force for emergencies than most drivers are ever able to generate.

		Oracle Value	SAS Value
26	4WD/AWD	26	6

Both front and rear axles capable of power.   This does not mean that the four wheel drive was in use at the time of the crash. Code for presence.

40	Altered suspension (raised, lowered, etc.)	40	11

Vehicle suspension altered from factory or OEM dimensions. The effect is generally to raise or lower the chassis relative to the ground clearance, which is immediately visible.
The suspension can be changed to improve handling also. This type of change is not usually evident in a visual inspection.

42	Tires (Large, Low Profile, etc.)	42	12

Select this attribute if the vehicle is equipped with tires which are not the recommended size on the vehicle tire placard.

Form Screen Name: **Type Of Equipment In/On Vehicle**   75

 Oracle Variable: EQUIPMENT.EQUIP_TYPE   956

		Oracle Value	SAS Value
Element Attributes:			
45	Rims Non OEM rims, purchased after-market, frequently ornamental.	45	13
46	Cargo holder - roof mounted Device for holding cargo which is fastened to the roof of a vehicle. This is not a luggage rack but a container for the luggage which is attached temporarily to the roof.	46	14
47	Cargo holder - rear mounted Use when a container for holding cargo is attached to the rear of the vehicle. This container can be enclosed or open. A common type is one attached to the trailer hitch assembly.	47	15
48	Bike rack - hitch mounted Bicycle rack designed for holding one or more bicycles which is attached to the trailer hitch.	48	16
49	Bike rack - roof mounted Bicycle rack designed for holding one or more bicycles which is attached to the roof or trunkdeck of the vehicle.	49	17
2088	Other braking and handling (specify) : Use this attribute for equipment that assists the driver in the braking and handling of the vehicle. Use this attribute only when the equipment does not fall under the definition of any of the other attributes in the Braking and Handling classification. Specify the name and function of the equipment.	2088	8888

Advanced

		Oracle Value	SAS Value
3	Navigation system-installed in vehicle Select this attribute for navigation systems permanently installed in the vehicle. An example of this type is one with a screen in the instrument panel. A navigation system is a computerized system using GPS technology, which contains a database of maps and destinations. This system locates places based on operator input. The device provides voice command and/or visual routing to a selected destination.	3	1
9	Navigation system - portable Select this attribute for navigation systems not permanently installed in the vehicle. An example of this type is one attached by suction cups to the windshield. A navigation system is a computerized system using GPS technology, which contains a database of maps and destinations. This system locates places based on operator input. The device provides voice command and/or visual routing to a selected destination.	9	2
27	ITS (intelligent communication system--Specify) : Vehicle systems that either operate individually or integrate with the roadway environment to improve the movement of the vehicle to its destination	27	6
52	Rear view camera A video feed is provided from the back of the vehicle onto a monitor in front of the driver. It shows you what is going on behind you and makes backing up safer and more accurate.	52	52
54	Front object sensor	54	54

Form Screen Name: **Type Of Equipment In/On Vehicle**   76

   Oracle Variable: EQUIPMENT.EQUIP_TYPE   956

		Oracle Value	SAS Value
Element Attributes:			
	Front Object Detection : detects proximity of objects, other vehicles, critical closing speeds and distances. Warns the driver of impending possible collisions. These systems can be set to automatic to control the speed of the vehicle by reducing the engine speed and applying brakes. Several automotive suppliers have systems in development and on the market. These will be difficult to detect.		
	Driver queries may be necessary to determine presence for coding this attribute.		
55	Heads-up display	55	55
	Capable of projecting different functions onto the windshield such as: radio station, speed, compass, outside temperature, gear-PRNDL		
56	Auto dimming rearview mirror	56	56
	Sensors in the rearview mirrors compare the intensity of light reflected in the mirror with that of the surrounding light. A large difference indicates glare, which is then reduced automatically by changing the mirror's reflectivity. This is accomplished by changing the electrical current being sent to an electrochromic element in the mirror (which is similar to a liquid-crystal display in a digital watch).		
57	Night vision display	57	57
	Night vision uses thermal imaging to help extend vision well beyond the range of low-beam headlamps. Infrared sensor detects heat from objects directly ahead, processes the data in real time and converts it into a video image reflected on the windshield. It allows for more time to react to potentially dangerous situations.		
100	Adaptive Front-Light System (AFS)	100	100
	Vehicle headlights move in direction of steering. When the car is turning or on a tight bend, this headlight can illuminate areas that were previously in the dark.		
	Correct coding of this attribute may require driver input.		
3088	Other advanced equip (specify) :	3088	8888
	Use this attribute for equipment that assists the driver in the operation of the vehicle during the driving task. Use this attribute only when the equipment does not fall under the definition of any of the other attributes in the Advanced classification. Specify the name and function of the equipment.		

   Sources:

         VEHICLE INSPECTION
         DRIVER INTERVIEW
         SURROGATE INTERVIEW

Form Screen Name: **Equipment availability in this vehicle**   77

Oracle Variable: EQUIPMENT.EQUIP_AVAILID   6384

Screen Name: Equipment availability in this vehicle

Form # - Name: 30 -

SAS Data Set:

SAS Variable:

Remarks:
   The researcher must determine through vehicle inspection, VIN breakdown or research into vehicle model
   standard/optional features if the vehicle contains the equipment.

Range:

Method:

Element Attributes:		**Oracle Value**	**SAS Value**
1	No	1	1
	This equipment or feature was not available in this vehicle at the time of the crash.		
2	Yes	2	2
	This equipment or feature was present and available in this vehicle at the time of the crash.		
9999	Unknown	-9999	9999
	The researcher is unable to determine if this equipment or feature was available in this vehicle at the time of the crash.		

Sources:

Form Screen Name: **Location of equipment**

Oracle Variable: EQUIPMENT.EQUIP_LOCATION   960

Screen Name: Location of equipment

Form # - Name: 31 -

SAS Data Set:

SAS Variable:

Remarks:
　　Location of the equipment, display or feature in or on the vehicle.

Range:

Method: Fill a single item

Element Attributes:		Oracle Value	SAS Value
EXTERIOR			
1	Exterior - Front	1	1
2	Exterior - Rear	2	2
3	Exterior - Right	3	3
4	Exterior - Left	4	4
5	Exterior - Top	5	5
6	Exterior - undercarriage	6	6
7	Position 11	7	7
8	Position 12	8	8
9	Position 13	9	9
10	Rear Seat Any seat or row rear of the front seat row	10	10
9999	Unknown	-9999	9999

Sources:
　　　　VEHICLE INSPECTION
　　　　DRIVER INTERVIEW

Form Screen Name: **Equipment in use**   79

Oracle Variable: EQUIPMENT.EQUIP_USE   961

Screen Name: Equipment in use

Form # - Name: 32 -

SAS Data Set:

SAS Variable:

Remarks:

Determine through examination of the vehicle, questioning of the driver and occupants if the equipment was in use in the precrash segment of this crash. Some research may be required to assess features that are not evident or known to the driver. Careful questioning may be necessary to elicit the truth about some equipment use such as CD/DVD players, cell phones, etc.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Yes	1	1
Equipment in use during precrash segment.		
2 No	2	2
Equipment not in use during precrash segment.		
9999 Unknown	-9999	9999
Unknown if equipment was in use during the precrash segment.		

Sources:

VEHICLE INSPECTION
DRIVER INTERVIEW
SURROGATE INTERVIEW

Form Screen Name: After market

Oracle Variable: EQUIPMENT.AFTER_MKT_EQUIP   955

Screen Name: After market

Form # - Name: 33 -

SAS Data Set:

SAS Variable:

Remarks:

Determine if the vehicle had this equipment/feature at the time of the crash and if present, determine if this was an aftermarket installation or presence.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Yes This equipment was not part of the original equipment on or in the vehicle at manufacture but was present at the time of the crash.	1	
2 Not equipped The equipment was either installed in/on the vehicle at the time of manufacture or the vehicle did not have an aftermarket installation of this equipment.	2	2
9999 Unknown Unknown if the equipment or feature was present at the time of the crash or unknown if the equipment was installed in the vehicle after manufacture.	-9999	9999

Sources:

VEHICLE INSPECTION
DRIVER INTERVIEW
REVIEWER ASSESSMENT
SURROGATE INTERVIEW
RESEARCHER ASSESSMENT

Form Screen Name: Tires

Oracle Variable: TIRE.TIRE_LOCATION   3665

Screen Name: Tires

Form # - Name: 34 -

SAS Data Set:

SAS Variable:

Remarks:
    Precrash location of tire on vehicle.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Left Front	1	1
2 Left Rear	2	2
3 Right Rear	3	3
4 Right Front	4	4

Sources:
        VEHICLE INSPECTION
        DRIVER INTERVIEW
        SURROGATE INTERVIEW

Form Screen Name: **Tire make**

Oracle Variable: TIRE.TIRE_MAKE   3657

Screen Name: Tire make

Form # - Name: 35 -

SAS Data Set:

SAS Variable:

Remarks:
Make of tire as visible on tire
The name of the manufacturer will be many found on the sidewall of the tire. If it cannot be read then indicate "Unknown".
If the tire is missing and cannot be examined then indicate "Tire missing". If the wheel hub is resting on the tire or the tire can be found elsewhere (i.e., in the bed of a pickup) and it can be ascertained that this is the "missing" tire for the vehicle, then indicate the appropriate information about the tire.
Generate list from NASS, edit and load into table

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 AKURET	1	1
2 AMERICAN	2	2
3 AMERICAN RADIAL	3	3
4 APACHE	4	4
5 ARIZONIAN	5	5
6 ARMSTRONG	6	6
7 ASTRO	7	7
8 ATLAS	8	8
9 AURORA	9	9
10 AVON	10	10
11 BARUM	11	11
12 BFGOODRICH	12	12
13 BIG O	13	13
14 BILT-MOR	14	14
15 BRADLEY	15	15
16 BRIDGESTONE	16	16
17 BRIGADIER	17	17
18 BRUNSWICK	18	18
19 CARQUEST	19	19
20 CASCADE	20	20
21 CAVALIER	21	21
22 CEAT	22	22
23 CENTENNIAL	23	23
24 CHENG SHIN	24	24

Form Screen Name: Tire make   83

Oracle Variable: TIRE.TIRE_MAKE   3657

Element Attributes:	Oracle Value	SAS Value
25 CONCORDE	25	25
26 CONTENTAL/TAG	26	26
27 CONTINENTAL	27	27
28 CO-OP	28	28
29 COOPER	29	29
30 COOPER-EXPORT	30	30
31 CORDOVAN	31	31
32 CORNELL	32	32
33 COSMO	33	33
34 CRESTWOOD	34	34
35 CROWN	35	35
36 DANZIG	36	36
37 DAYTON	37	37
38 DEAN	38	38
39 DELTA	39	39
40 DENMAN	40	40
41 DIAMOND	41	41
42 DOMINATOR	42	42
43 DORAL	43	43
44 DOUBLE COIN	44	44
45 DOUGLAS	45	45
46 DUNLOP	46	46
47 DURALON	47	47
48 DYNASTAR	48	48
49 ELDORA DO	49	49
50 ELECTRA	50	50
51 EMBASSY	51	51
52 ESCORT	52	52
53 EUROTECH	53	53
54 EXXON	54	54
55 FALKEN	55	55
56 FEDERAL	56	56
57 FIRESTONE	57	57
58 FISK	58	58
59 FORMULA	59	59

Form Screen Name: Tire make   84

  Oracle Variable: TIRE.TIRE_MAKE   3657

Element Attributes:	Oracle Value	SAS Value
60 FRONTIER	60	60
61 FULDA	61	61
62 FUTURA	62	62
63 GENERAL	63	63
64 GILLETE	64	64
65 GISLAVED	65	65
66 GOODRICH	66	66
67 GOODYEAR	67	67
68 GT TIRE	68	68
69 GT TIRE US	69	69
70 GUARDIAN	70	70
71 GUARDSMAN	71	71
72 HALLMARK	72	72
73 HANKOOK	73	73
74 HERCULES	74	74
75 HIGH COUNTRY	75	75
76 HOOD	76	76
77 HOOSIER	77	77
78 JETZON	78	78
79 JUPITER	79	79
80 KELLY	80	80
81 KELLY-SPRINGFIELD	81	81
82 KINGSTAR	82	82
83 KIRKLAND	83	83
84 KIRKWOOD	84	84
85 K-MART	85	85
86 KUMHO	86	86
87 LARAMIE	87	87
88 LASSA	88	88
89 LEE	89	89
90 M&H	90	90
91 MABOR	91	91
92 MARSHAL	92	92
93 MASTERCRAFT	93	93
94 MAXXIS	94	94

Form Screen Name: Tire make   85

Oracle Variable: TIRE.TIRE_MAKE   3657

Element Attributes:		Oracle Value	SAS Value
95	MEDALIST	95	95
96	MENTOR	96	96
97	MERIT	97	97
98	MICHELIN	98	98
99	MICKEY THOMPSON	99	99
100	MILLER	100	100
101	MITAS	101	101
102	MODI	102	102
103	MOHAWK	103	103
104	MONARCH	104	104
105	MONTGOMERY WARD	105	105
106	MRF	106	106
107	MULTI-MILE	107	107
108	NANKANG/BRADLEY	108	108
109	NATIONAL	109	109
110	NITTO	110	110
111	NOKIAN	111	111
112	NTB	112	112
113	OHTSU	113	113
114	PACEMARK	114	114
115	PANTHER	115	115
116	PARKWAY	116	116
117	PARNELLI	117	117
118	PATRIOT	118	118
119	PEERLESS	119	119
120	PENSKE	120	120
121	PHILLIPS	121	121
122	PIRELLI	122	122
123	POLARIS	123	123
124	POS-A-TRAC	124	124
125	POS-A-TRACTION	125	125
126	REGUL	126	126
127	RELIANT	127	127
128	REMINGTON	128	128
129	REPUBLIC	129	129

Form Screen Name: Tire make

Oracle Variable: TIRE.TIRE_MAKE   3657

Element Attributes:	Oracle Value	SAS Value
130 REYNOLDS	130	130
131 RIKEN	131	131
132 ROAD KING	132	132
133 ROADMASTER	133	133
134 ROADPRO	134	134
135 RUNWAY	135	135
136 SEARS	136	136
137 SEMPERIT	137	137
138 SHELL	138	138
139 SIDEWINDER	139	139
140 SIEBERLING	140	140
141 SIGMA	141	141
142 SOLO-TECH	142	142
143 SONIC	143	143
144 SPARTAN	144	144
145 SPORT IV	145	145
146 STAR	146	146
147 STARFIRE	147	147
148 SUMITOMO	148	148
149 SUMMIT	149	149
150 SUPER SPORT	150	150
151 TACOMA	151	151
152 TBC	152	152
153 TELSTAR	153	153
154 TEMCO	154	154
155 TIGAR	155	155
156 TNT	156	156
157 TOSCO 76	157	157
158 TOURING SUPREME	158	158
159 TOYO	159	159
160 TREDTECH	160	160
161 TRIBUNE	161	161
162 TURNPIKE USA	162	162
163 ULTRA-TECH	163	163
164 UNION 76	164	164

Form Screen Name: Tire make

Oracle Variable: TIRE.TIRE_MAKE   3657

Element Attributes:		Oracle Value	SAS Value
165	UNIROYAL	165	165
166	UNIVERSAL	166	166
167	VANDERBILT	167	167
168	VIKING	168	168
169	VISA	169	169
170	VOGUE	170	170
171	VREDESTEIN	171	171
172	WESTERN AUTO	172	172
173	WINSTON	173	173
174	WOOSUNG	174	174
175	YKS	175	175
176	YOKOHAMA	176	176
177	AllegianceIV	177	177
178	Lemans	178	178
179	Liberator	179	179
180	Wynstar	180	180
181	Pathfinder	181	181
8887	TIRE MISSING	-8887	8887
8888	Other (specify)	-8888	8888
9999	Unknown	-9999	9999

The tire make cannot be determined for reasons other than the tire is missing and cannot be located.   Use this code for situations such as vehicle fire and the tires burned; tire became shredded during precrash or crash sequence, etc.

Sources:

VEHICLE INSPECTION
DRIVER INTERVIEW
SURROGATE INTERVIEW

Form Screen Name: Model name of tire   88

Oracle Variable: TIRE.TIRE_MODEL   3661

Screen Name: Model name of tire

Form # - Name: 36 -

SAS Data Set:

SAS Variable:

Remarks:
    Enter the model name of the tire
    The name of the model will be many found on the sidewall of the tire. If it cannot be read then indicate "Unknown".

Range:

Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
8888	Other (specify)	-8888	8888
9997	Known make/Unknown model	-9997	9997
9998	Unable to determine/tire destroyed	-9998	9998
9999	Unknown	-9999	9999

Sources:
        VEHICLE INSPECTION
        DRIVER INTERVIEW
        SURROGATE INTERVIEW

Form Screen Name: **Tire identification number**

Oracle Variable: TIRE.TIRE_ID_NUMBER   3671

Screen Name: Tire identification number

Form # - Name: 37 -

SAS Data Set:

SAS Variable:

Remarks:

Tire identification number. Specifically requires each new tire manufacturer and each tire retreader to mold a TIN into or onto the sidewall of each tire produced, in the manner and location specified in the reference at the end of this section. The sections below contain a small segment of the document setting out specifications for the TIN. Please refer to the reference listed at the end of this section for more elaboration.
The TIN will be preceded by DOT or DOT-R
 The TIN is composed of four groups:

1. The first group represents the manufacturer's identification mark assigned to such manufacturer by this agency in accordance with §574.6;

2. The second group represents the tire size for new tires; for retreaded tires, the second group represents the retread matrix in which the tire was processed or, if no matrix was used, a tire size code;

3. The third group may, at the option of the manufacturer, be used as a descriptive code for identifying significant characteristics of the tire. If the tire is produced for a brand name owner, the third grouping must identify such brand name owner; and

4. The fourth group identifies the week and year of manufacture. The first two figures identify the week, starting with "01" to represent the first full week of the calendar year; the second two figures represent the year. For example, "2198" represents the 21st week of 1998.(6)

NHTSA originally proposed these requirements in response to the May 22, 1970 amendments to the National Traffic and Motor Vehicle Safety Act of 1966, Pub. L. 89-563, originally 15 U.S.C. 1581 et seq. (Codified in 1995 and now found at 49 U.S.C. 30101 et seq.). Those amendments, among other things, required manufacturers and brand name owners of new and retreaded motor vehicle tires to maintain records of the names and addresses of the first purchasers of tires (other than dealers or distributors) in order to facilitate notification of such purchasers in the event tires were found to be defective or not to comply with applicable Federal motor vehicle safety standards.
6 In response to petitions for a rulemaking, the agency amended NHTSA's tire identification and recordkeeping regulation in 1999 to require the date of manufacture to be expressed in four digits, instead of the previously required three, so that consumers would be able to determine the decade of manufacture of their tires. (64 FR 36807; July 8, 1999) This rule also reduced the minimum size of the digits from the then currently required minimum of 6 millimeters (mm) (1/4 inch) to 4 mm (5/32 inch) to relieve the manufacturers and retreaders of the burden they might otherwise have incurred by having to redesign their tire molds to accommodate the additional digit.

Reference document can be found at: http://www.nhtsa.dot.gov/cars/rules/rulings/TREAD/NPRM/Index.html

Title:
DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
49 CFR Parts 567, 571, 574 and 575
Docket No. NHTSA-01-11157
RIN 2127-AI32
Tire Safety Information

Range:

Method: Enter a value _____

Sources:
            VEHICLE INSPECTION

Form Screen Name: **Tire size on vehicle at crash**

 Oracle Variable: TIRE.TIRE_SIZE_USED   5962

 Screen Name: Tire size on vehicle at crash

 Form # - Name: 38 -

SAS Data Set:

SAS Variable:

 Remarks:

Record tire size. This information will be on the tire sidewall.   Check all tires to verify size. Do not assume that the same size is on all wheels.
Use the format below to record the tire size.

If a character cannot be read then leave a blank space where the character belongs.
a=alpha value to enter   n=numeric value to enter
P=P-Metric tire precoded   LT=Light Truck designation precoded

Blanks permitted at any location

P-Metric P n n n / n n a n n
Examples: P215/65R15, P215/65R15
Explanation:
P= Passenger Car Tire
215= Section Width in Millimeters
65= Aspect Ratio
R= Radial Construction
15= Rim Diameter in Inches

Light Truck Metric L T n n n / n n a n n
Examples: LT235/75R15
Explanation:
LT= Light Truck Tire
235= Section Width in Millimeters
75= Aspect Ratio
R= Radial Construction
15= Rim Diameter in Inches

Light Truck High Flotation n n X n n . n n a n n L T
Example: 31X10.50R15LT
Explanation:
31= Tire Diameter in Inches
10.50= Section Width in Millimeters
R= Radial Construction
LT= Light Truck Tire
15= Rim Diameter in Inches

Light Truck Numeric n . n n a n n . n L T
Example: 8.75R16.5LT
Explanation:
8.75=Section Width in Inches
R=Radial Construction
16.5=Rim Diameter in Inches
LT=Light Truck Designation

 Range:

 Method: Enter Size ___ ___ ___ ___ /   ___ ___ ___

Form Screen Name: **Tire size on vehicle at crash**

  Oracle Variable: TIRE.TIRE_SIZE_USED   5962

Element Attributes:	Oracle Value	SAS Value
1 P-Metric (specify)	1	1
2 Light Truck Metric (specify)	2	2
3 Light Truck High Flotation (specify)	3	3
4 Light Truck Numeric (specify)	4	4
8 Other (specify)	8	8
9999 Unknown	-9999	9

  Sources:

         VEHICLE INSPECTION

Form Screen Name: **Tire pressure**

Oracle Variable: TIRE.TIRE_PRESSURE   3674

Screen Name: Tire pressure

Form # - Name: 39 -

SAS Data Set:

SAS Variable:

Remarks:

   The Measured Pressure is to be documented using the supplied air pressure gauge. Adhere to the following instructions when taking and reading the pressure:

   The pressure gauge should be cleared before taking the reading. It should be placed over the tire's valve stem and press firmly so that no escaping air is heard. If the vehicle is equipped with dual rear wheels, document only the outboard tires. NOTE: Testing has revealed that a tire will normally lose 0.1 psi for each reading. Record the pressure of the tire at the time of inspection, regardless of whether the tire has been replaced or reinflated since the crash.

   2/2000 -91-

Range:

Method:

Sources:

       VEHICLE INSPECTION

Form Screen Name: Tire tread depth   93

  Oracle Variable: TIRE.TIRE_TREAD_DEPTH   3678

  Screen Name: Tire tread depth

  Form # - Name: 40 -

  SAS Data Set:

  SAS Variable:

  Remarks:

    Indicate the tread depth in 1/32 inch (program automatically converts 1/32 inch to mm). The Minimum Tire Tread Depth is to be measured using the supplied tire tread depth indicator. The measurement should be taken on the shallowest groove of the tread. Be careful not to measure on a wear bar indicator. The measurement is to be documented to the nearest 32nd inch.

  Range:

  Method: Enter a value _____

  Sources:

    VEHICLE INSPECTION

Form Screen Name: **Tire damage prior to first harmful event**   94

Oracle Variable: TIREDAMAGE.TIRE_DAMAGE   6084

Screen Name: Tire damage prior to first harmful event

Form # - Name: 41 -

SAS Data Set:

SAS Variable:

Remarks:
   Examine each tire for precrash flaws or damage. The precrash flaws or damaged areas should appear weathered or filled with grime. Crash damage should appear cleaner than the other areas of the tire or have small particles of rubber adhering to the damaged area. Look for flat spots or missing areas in the tread, bubbles in the sidewall or tread, cuts or abrasions to the sidewalls or tread.

Range:

Method: Select as many as apply

Element Attributes:		**Oracle Value**	**SAS Value**
1	No damage	1	1
2	Complete tread separation	2	2
3	Partial tread separation	3	3
4	Sidewall separation	4	4
5	Sidewall blowout	5	5
6	Cuts/tears in sidewall	6	6
7	Bubble or bulge	7	7
8	Sidewall scuff	8	8
9	Bead/rim separation	9	9
10	Puncture in tread	10	10
11	Puncture in sidewall	11	11
12	Cuts/tears in tread	12	12
13	Tread blowout	13	13
14	Deflated, unknown reason	14	14
9998	Other (specify) :	-9998	9998
9999	Unknown	-9999	9999

   Unable to determine if there was any damage to the tires prior to this vehicle's first harmful event

Sources:
         VEHICLE INSPECTION

Form Screen Name: Recommended tire size-front

Oracle Variable: TIRE_RECOMMENDATION.TIRE_REC_SIZE_FRONT   5966

Screen Name: Recommended tire size-front

Form # - Name: 42 -

SAS Data Set:

SAS Variable:

Remarks:

Record recommended tire size . This information will be on the tire placard or in the owner's manual. Look for the placard on the B pillar, the rear of the front door, glove compartment door, underside of the trunk lid or the inside of the fuel filler door. If the tire placard or owner's manual doesn't specify whether the recommended tire pressure is a hot or cold pressure, assume that it is a cold pressure.
Take a photo of the placard and categorize it in the vehicle identification category.

If a character cannot be read then leave a blank space where the character belongs.
a=alpha value to enter   n=numeric value to enter
P=P- Metric tire precoded   LT=Light Truck designation precoded

Blanks permitted at any location

P- Metric P n n n / n n a n n
P215/65R15, P215/65R15

P= Passenger Car Tire
215= Section Width in Millimeters
65= Aspect Ratio
R= Radial Construction
15= Rim Diameter in Inches

Light Truck Metric L T n n n / n n a n n
LT235/75R15
LT= Light Truck Tire
235= Section Width in Millimeters
75= Aspect Ratio
R= Radial Construction
15= Rim Diameter in Inches

Light Truck High Flotation n n X n n . n n a n n L T
31X10.50R15LT
31= Tire Diameter in Inches
10.50= Section Width in Millimeters
R= Radial Construction
LT= Light Truck Tire
15= Rim Diameter in Inches

Light Truck Numeric n . n n a n n . n L T
8.75R16.5LT
8.75=Section Width in Inches
R=Radial Construction
16.5=Rim Diameter in Inches
LT=Light Truck Designation

Range:

Method: Enter Size ___ ___ ___ ___ / ___ ___ ___

	Oracle Value	SAS Value
Element Attributes:		

Form Screen Name: **Recommended tire size-front**

Oracle Variable: TIRE_RECOMMENDATION.TIRE_REC_SIZE_FRONT   5966

Element Attributes:	Oracle Value	SAS Value
9999 Unknown	-9999	9999
Unable to determine. No information on vehicle or in owner's manual		

Sources:

VEHICLE INSPECTION

Form Screen Name: **Recommended tire size-rear**

Oracle Variable: TIRE_RECOMMENDATION.TIRE_REC_SIZE_REAR   5968

Screen Name: Recommended tire size-rear

Form # - Name: 43 -

SAS Data Set:

SAS Variable:

Remarks:

Record recommended tire size . This information will be on the tire placard or in the owner's manual. Look for the placard on the B pillar, the rear of the front door, glove compartment door, underside of the trunk lid or the inside of the fuel filler door. If the tire placard or owner's manual doesn't specify whether the recommended tire pressure is a hot or cold pressure, assume that it is a cold pressure.
Take a photo of the placard and categorize it in the vehicle identification category.

If a character cannot be read then leave a blank space where the character belongs.
a=alpha value to enter   n=numeric value to enter
P=P-Metric tire precoded   LT=Light Truck designation precoded

Blanks permitted at any location

P-Metric P n n n / n n a n n
P215/65R15, P215/65R15

P= Passenger Car Tire
215= Section Width in Millimeters
65= Aspect Ratio
R= Radial Construction
15= Rim Diameter in Inches

Light Truck Metric L T n n n / n n a n n
LT235/75R15
LT= Light Truck Tire
235= Section Width in Millimeters
75= Aspect Ratio
R= Radial Construction
15= Rim Diameter in Inches

Light Truck High Flotation n n X n n . n n a n n L T
31X10.50R15LT
31= Tire Diameter in Inches
10.50= Section Width in Millimeters
R= Radial Construction
LT= Light Truck Tire
15= Rim Diameter in Inches

Light Truck Numeric n . n n a n n . n L T
8.75R16.5LT
8.75=Section Width in Inches
R=Radial Construction
16.5=Rim Diameter in Inches
LT=Light Truck Designation

Range:

Method: Enter Size ___ ___ ___ ___ / ___ ___ ___

	Oracle Value	SAS Value
Element Attributes:		

Form Screen Name: **Recommended tire size-rear**   98

  Oracle Variable: TIRE_RECOMMENDATION.TIRE_REC_SIZE_REAR   5968

			Oracle Value	SAS Value
Element Attributes:				
9999	Unknown		-9999	9999
	Unable to determine. No information on vehicle or in owner's manual			

  Sources:

        VEHICLE INSPECTION

			Oracle Value	SAS Value

Form Screen Name: **Recommended tire pressure-front**   99

Oracle Variable: TIRE_RECOMMENDATION.TIRE_REC_PRESS_FRONT   5970

Screen Name: Recommended tire pressure-front

Form # - Name: 44 -

SAS Data Set:

SAS Variable:

Remarks:
   Record recommended pressure in psi. This information will be on the tire placard or in the owner's manual. Look for the placard on the B pillar, the rear of the front door, glove compartment door, underside of the trunk lid or the inside of the fuel filler door. If the tire placard or owner's manual doesn't specify whether the recommended tire pressure is a hot or cold pressure, assume that it is a cold pressure.
   Take a photo of the placard and categorize it in the vehicle identification category.

Range:

Method: Enter pressure in PSI ____ ____ ____ ____

Element Attributes:	Oracle Value	SAS Value
9999 Unknown	-9999	9999
Unable to determine. No information on vehicle or in owner's manual		

Sources:

Form Screen Name: **Recommended tire pressure-rear**

Oracle Variable: TIRE_RECOMMENDATION.TIRE_REC_PRESS_REAR   5972

Screen Name: Recommended tire pressure-rear

Form # - Name: 45 -

SAS Data Set:

SAS Variable:

Remarks:
Record recommended pressure in psi. This information will be on the tire placard or in the owner's manual. Look for the placard on the B pillar, the rear surface of the front door, glove compartment door, underside of the trunk lid or the inside of the fuel filler door. If the tire placard or owner's manual doesn't specify whether the recommended tire pressure is a hot or cold pressure, assume that it is a cold pressure.
Take a photo of the placard and categorize it in the vehicle identification category.

Range:

Method: Enter pressure in PSI ____ ____ ____ ____

	Oracle Value	SAS Value
Element Attributes:		
9999 Unknown	-9999	9999
Unable to determine. No information on vehicle or in owner's manual		

Sources:

Form Screen Name: **Glazing**

Oracle Variable: GLAZING.GLAZING_LOC   1316

Screen Name: Glazing

Form # - Name: 46 -

SAS Data Set:

SAS Variable:

Remarks:

Glazing is defined for these variables as a covering for openings in the vehicle's structure which has the ability to allow light to pass. The areas of interest include: the windshield, sidelight windows, backlight (hatchback, tailgate, liftback, rear window), and roof. Composition of glazing materials in use include:
glass, plastic, and glass-plastic. For the purposes of this study, gathering information on the precrash condition of the glazing is vital. This may present some difficulty at times due to breakage during the crash sequence.

Examine and record data for only those windows which might have been a factor in the crash. For example, in an intersection collision , this vehicle proceeds into the intersection and is struck on the left side; the windshield and left side windows would be the only ones evaluated for the glazing variables. All others would be coded NA in presence.

Other = other sidelights, door wing windows, and any other light not identified above
The "other" category (as noted) encompasses areas where glazing should be, (i.e. opening in the exterior of the vehicle). This would include wing windows located in door areas. In the event more than one "other" area was involved, select the area with the highest priority number as ranked above. When more than one glazing has priority, the researcher should select the glazing which is closest to the front of the vehicle with the left side taking precedence over the right side. The researcher must specify the selected glazing in the space provided.

Range:

Method: Check or Enter Value in Box

Element Attributes:	**Oracle Value**	**SAS Value**
1 Windshield	1	1
2 Left front	2	2
Select this attribute for glazing in the left side, adjacent to and from the A-pillar toward the back of the vehicle.		
3 Right front	3	3
Select this attribute for glazing in the right side, adjacent to and from the A-pillar toward the back of the vehicle.		
4 Left rear	4	4
Select this attribute for glazing in the left side, adjacent to and from the E-pillar toward the back of the vehicle.		
5 Second window left rear	5	5

Form Screen Name: Glazing   102

  Oracle Variable: GLAZING.GLAZING_LOC   1316

		Oracle Value	SAS Value
Element Attributes:			
	Select this attribute for glazing in the left side, adjacent to and from the C-pillar toward the back of the vehicle.		
6	Right rear	6	6
	Select this attribute for glazing in the right side, adjacent to and from the E-pillar toward the back of the vehicle.		
7	Second window right rear	7	7
	Select this attribute for glazing in the right side, adjacent to and from the C-pillar toward the back of the vehicle.		
10	Backlight	10	10
	Select this attribute for glazing in the rear surface of the vehicle.		
15	Roof	15	15
	Used for sun roof, moon roof, "T" roof, etc.		
20	Other (specify) :	20	20
	Used when there are other sidelights, door wing windows, and any other locations not in previous attributes. The researcher must specify the selected glazing in the space provided.		

  Sources:

         VEHICLE INSPECTION

Form Screen Name: Condition of glazing   103

Oracle Variable: GLAZING.GLAZING_COND   1330

Screen Name: Condition of glazing

Form # - Name: 47 -

SAS Data Set:

SAS Variable:

Remarks:

Record the precrash condition of the glazing in the vehicle. If the glazing is missing due to crash damage, query the driver about its precrash condition.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Intact Select when no precrash damage to the glazing. Glazing damage for these variables is defined as cracking, holed, out-of-place or disintegrated. Glazing which is scratched is considered not damaged. Record scratching in the Glazing clarity variable.	1	1
2 Cracked not related to impact Used when the glazing remained within the confines of its specific area and was cracked before the crash.	2	2
3 Broken not related to impact Used when glazing was totally destroyed but not by impact forces	3	3
4 Cracked due to impact Used when the glazing remained within the confines of its specific area and was cracked. Displaced glazing that was not totally separated from the vehicle should be treated as "in place". This would include windshields with partial bond separation and dislodged side glazing(s).	4	4
5 Broken due to impact Used when glazing was totally destroyed by impact forces or vehicle damage. This usually occurs with shattered tempered glass (i.e., sidelights, etc.). Windshields that are separated from the vehicle should not be considered disintegrated. Uncertainty may exist when determining the cause of shattered sidelight glazing when the collision occurred adjacent to an occupied seat. As a rule of thumb, impact forces and/or vehicle damage generally cause disintegration of the sidelight prior to occupant contact.	5	5
9999 Unknown Used in the following situations. The degree of damage could not be determined as the result of post impact damage (i.e., extrication, towing operations, etc.). Due to factors beyond the researcher's control, an adequate determination of glazing damage could not be made (i.e., catastrophic type vehicle damage, etc.). This should be a rare occurrence. The cause of glazing damage (i.e., impact forces versus occupant contact) could not be determined by the researcher. Caution, it is anticipated this reason will be rarely used. When confronted with this dilemma, every effort must be made to select a known value for damaged glazing.	-9999	9999

Sources:

VEHICLE INSPECTION

Form Screen Name: Clarity of glazing   104

Oracle Variable: GLAZING.GLAZING_CLARITY   1337

Screen Name: Clarity of glazing

Form # - Name: 48 -

SAS Data Set:

SAS Variable:

Remarks:

    Record the clarity of glazing in the vehicle in its precrash condition. This may be difficult, depending on the type of crash.
    If necessary, query the driver about the clarity.

Range:

 Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Clear	1	1
Used for clean clear windows.		
2 Hazy	2	2
Used for glazing with a slight haze.		
3 Slightly dirty	3	3
Used when glazing with more than a haze, having a slight layer of dust or dirt that impedes looking out the glazing.		
4 Very dirty	4	4
Used when the specific glazing has a limited view due to dirt/dust		
9999 Unknown	-9999	9999
Used when the researcher is unable to determine the clarity of the glazing, (i.e. disintegrated glazing).		

 Sources:

        VEHICLE INSPECTION

Form Screen Name: Pre-rollover maneuver

Oracle Variable: VEHICLE.ROLL_PREEVENT   3183

Screen Name: Pre-rollover maneuver

Form # - Name: 49 -

SAS Data Set:

SAS Variable:

Remarks:
Determine the last controlled maneuver, relative to the roadway, prior to the initiation of the rollover. This variable directly relates to the roadway coded in the precrash events. Refer to Preimpact Location on Trafficway to determine location of vehicle for correct coding of this variable.

Range:

Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	No rollover No rollover occurred involving this vehicle.	1	1
2	Departing roadway (to paved surface) Vehicle departs roadway to a paved shoulder, gore or other area as the last movement prior to the tripping point. This area is usually delineated by painted lines or ceramic dots.	2	2
3	Departing roadway (to nonpaved surface) Vehicle departs roadway to an unpaved shoulder, gore or unimproved area as the last movement prior to the trip point.	3	3
4	Returning to roadway (from paved surface) Vehicle returns to the roadway from a paved shoulder, gore or other area as the last movement prior to the trip point. Painted lines or ceramic dots usually delineate this area.	4	4
5	Returning to roadway (from nonpaved surface) Vehicle returns to the roadway from an unpaved shoulder, gore or other area as the last movement prior to the trip point.	5	5
6	On roadway maneuver The vehicle remained predominantly on the roadway and the trip point is on the roadway or immediately next to it.	6	6
7	Off roadway maneuver The vehicle departed the roadway completely. While off the roadway, the vehicle began or completed a maneuver different than the one that took it off the roadway.	7	7
9999	Unknown The researcher is unable to determine the maneuvers or location of the vehicle just prior to the rollover initiation. This code should be used only in very rare instances.	-9999	99

Sources:
DRIVER INTERVIEW
SCENE INSPECTION
VEHICLE INSPECTION

Form Screen Name: Location of rollover initiation   106

  Oracle Variable: VEHICLE.ROLL_INIT_LOC   1682

  Screen Name: Location of rollover initiation

  Form # - Name: 50 -

  SAS Data Set:

  SAS Variable:

  Remarks:

     Select the attribute which best describes the location at the initiation of the rollover. This selection should reflect the trip
     point of the overturn. If there is some ambiguity regarding the location, (i.e. front wheels on shoulder, rear wheels on travel
     lane) please consult your Zone Center.

  Range:

  Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No rollover	1	1
2 On roadway	2	2
Selected when the rollover initiates in the travel lanes of the roadway (i.e., between painted edgelines or between roadway edges when painted edge lines are absent). The median between roadways (divided highways such as thruways or expressways) is identified as codes On shoulder - paved, On shoulder - unpaved, or On roadside or divided trafficway median as described below. ANSI defines a roadway as that part of a trafficway designed, improved and ordinarily used for motor vehicle travel, and excludes any shoulder alongside the roadway.		
3 On shoulder -paved	3	3
Selected when the rollover initiation occurs on a paved surface outside the painted edgeline or the outer edge or pavement seam of the roadway. A shoulder may exist within the median of a divided highway or on the outermost edge of the roadway. A shoulder is defined as that part of a trafficway contiguous with the roadway for emergency use, for accommodation of stopped road vehicles, and for lateral support of the roadway structure.		
4 On shoulder - unpaved	4	4
Selected when the rollover initiation begins within the confines of the improved area (i.e., gravel or stone) contiguous with the roadway. Unpaved shoulders, for NASS CDS purposes, are composed of loose gravel or stone. Combination gravel/stone and asphalt surfaces, such as macadam or "chip and seal", are considered as paved. Roadways without an improved, contiguous surface will be considered as not having shoulders.		
5 On roadside or divided trafficway median	5	5
Selected when the rollover initiation occurs outside the roadway and the shoulder. There are roads where sod or dirt will support the roadway edge. When the rollover initiation occurs within this area, use this attribute because this roadway does not have shoulders. In addition, shoulders end wherever most curbs or fixed objects begin. If the trip begins on a curb that is adjacent on one side to a sidewalk, turf, or dirt, then use this attribute. If the rollover is initiated by a fixed object, then use this attribute. Care must be exercised with some mountable curbs. If the mountable curb has paving on both sides and its primary function is to control water runoff, then use On shoulder-paved.		

Form Screen Name: **Location of rollover initiation**

Oracle Variable: VEHICLE.ROLL_INIT_LOC   1682

		Oracle Value	SAS Value
Element Attributes:			
6	Rollover - end-over-end	6	6
9999	Unknown	-9999	9999

Sources:

SCENE INSPECTION

Form Screen Name: **Rollover initiation object contacted**   108

Oracle Variable: VEHICLE.ROLL_INIT_OBJ   1683

Screen Name: Rollover initiation object contacted

Form # - Name: 51 -

SAS Data Set:

SAS Variable:

Remarks:
    This variable is related to Rollover Initiation Type, and identifies the source of the force that acted upon the vehicle that resulted in the rollover. These attributes are obtained from the Events section of the Crash form.. If the rollover was initiated by an impact that was assigned a CDC, then the object contacted for that CDC will be selected for this variable. If the rollover is not initiated by an impact with another vehicle or the object impact produced no damage, the researcher must determine the cause (i.e., initiation force) of the rollover and consequently the object(s) contacted during the rollover. For example, if a vehicle strikes a curb that trips the vehicle, then select Curb even though the CDC Object Contacted for the rollover would probably equal Overturn- rollover.

    Similarly, if a vehicle vaults a longitudinal barrier (Climb-over), then select Concrete traffic barrier or Other traffic barrier, depending upon the longitudinal barrier design. If a yawing vehicle rolls as a result of centrifugal forces caused by normal surface friction or as a result of burrowing into soft soil, then select Ground because the ground applied the force that acted as the tripping mechanism for the rollover.

Range:
    Same as EVENTS.HIT_OBJECT filtered by ROLL_INT_OBJ_TYPE.

 Method: Fill a single item

 Sources:
          OBSERVATION

Form Screen Name: Location on vehicle where initial tripping force is applied   109

Oracle Variable: VEHICLE.INIT_PRINC_LOC   1684

Screen Name: Location on vehicle where initial tripping force is applied

Form # - Name: 52 -

SAS Data Set:

SAS Variable:

Remarks:
Generally the tripping forces that initiate a rollover are applied at the wheels/tires. Occasionally the tripping force is applied at the undercarriage (e.g., when a vehicle mounts a guardrail) or at the side or end plane (e.g., when a barrier or another vehicle impacts the front or side plane of the vehicle and flips or initiates the rollover sequence). The purpose of this variable is to identify the specific point on the vehicle where the tripping force was applied.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No rollover Used when the vehicle did not rollover	1	1
2 Wheels Used when the tripping force is applied to the wheels. The most common occurrences involve wheel impacts to potholes and curbs, and wheels that gouge the pavement or dig into the earth.	2	2
3 Tires Used when the tripping force is applied to the tires. The most common occurrences involve tire impacts to potholes and curbs	3	3
4 Side plane Used when the side plane other than the wheels and tires is contacted and that contact initiates the rollover.	4	4
5 End plane Used when the end plane of the vehicle is contacted and sustained the rollover initiating force. For example, a vehicle was traveling at a high rate of speed when it impacted a concrete median barrier [i.e., Rollover Initiation Object Contacted, equals Concrete traffic barrier] with its front left corner. The barrier redirects the vehicle upward and back towards the roadway. As a result, the vehicle rolls over; therefore use this attribute.	5	5
6 Undercarriage Used when the rollover was caused by a force acting primarily through the undercarriage plane. For example, a vehicle strikes a guardrail {i.e., Rollover Initiation Object Contacted equals Other traffic barrier (includes guardrail)} with its front right. The vehicle climbs up and over the guardrail and rolls over; therefore use this attribute.	6	6
7 Other location on vehicle (specify) : Used when the tripping force is applied at a location that cannot be captured above. This attribute should be rarely used and only after consultation with the zone center.	7	7
8 Non-contact rollover forces (specify) : Used when the vehicle roll is precipitated by centrifugal or gravitational forces [i.e., Rollover Initiation Type equals Turn-over or Fall-over]. Specify the non-contact rollover force on the line provided.	8	8
9 Rollover - end-over-end Used when the rollover was a end-over-end configuration.	9	9

Form Screen Name: **Location on vehicle where initial tripping force is applied**   110

  Oracle Variable: VEHICLE.INIT_PRINC_LOC   1684

		Oracle Value	SAS Value
Element Attributes:			
9999	Unknown	-9999	9999
	Used when it is unable to be determined where the initial principal tripping force was applied.		

  Sources:

      VEHICLE INSPECTION
      SCENE INSPECTION

Form Screen Name: Direction of initial roll   111

   Oracle Variable: VEHICLE.ROLL_INIT_ROLL   1685

   Screen Name: Direction of initial roll

   Form # - Name: 53 -

   SAS Data Set:

   SAS Variable:

   Remarks:

During a side-over-side rollover, generally the corner or roof rail with the maximum crush is the trailing side. This will be a good indication of a roll to the right or a roll to the left. Striations or directional gouge marks on the vehicle are a good indication of a vehicle's roll along the longitudinal or lateral axis. Physical evidence at the crash scene, including yaw marks, scuffing, or gouging will also provide insight into the direction of the initial roll. It will not be uncommon to combine both vehicle and scene evidence when determining the direction of the initial roll.

   Range:

   Method: Fill a single item

	Element Attributes:	**Oracle Value**	**SAS Value**
1	No rollover	1	1
2	Roll right - primarily about the longitudinal axis Used when the vehicle rolls over with the right side leading, a clockwise rollover from the driver's view.	2	2
3	Roll left - primarily about the longitudinal axis Used when the vehicle rolls over with the left side leading, a counterclockwise rollover from the driver's view.	3	3
4	Rollover - end-over-end Used when the vehicle rolled end-over-end	4	4
9999	Unknown Used when the researcher is unable to determine which side the vehicle rolled on to initially.	-9999	9999

   Sources:

VEHICLE INSPECTION
SCENE INSPECTION

Form Screen Name: **Type of rollover initiation** 112

Oracle Variable: VEHICLE.ROLL_INIT_TYPE 1681

Screen Name: Type of rollover initiation

Form # - Name: 54 -
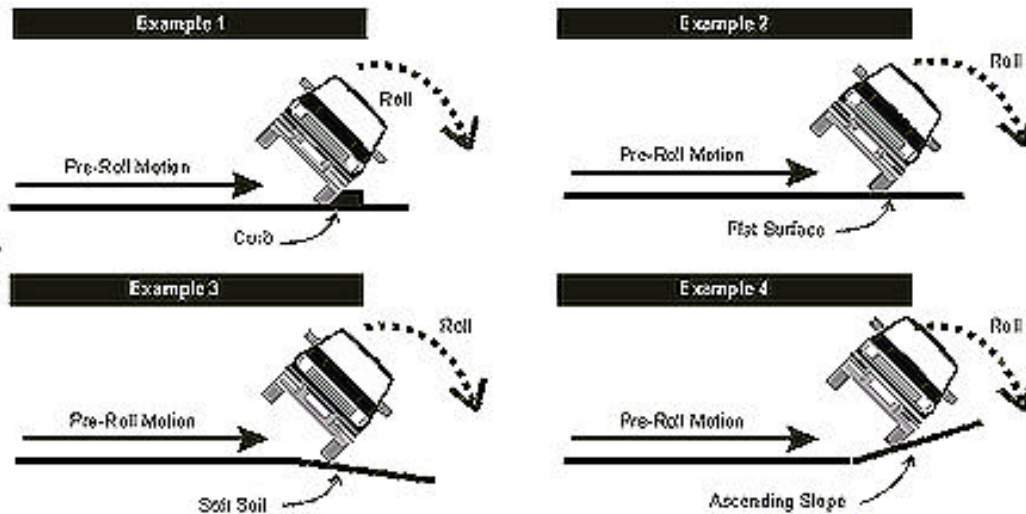
SAS Data Set:

SAS Variable:

Remarks:

Rollovers have been categorized into types, relating to the type and cause of the overturn. The categorization relates to vehicle movement and object interaction at the point of rollover initiation. A vehicle action that cannot be categorized under any of the specific types should be coded Other rollover initiation type and specified in the space provided. The attributes below are used for rollovers initiated about the longitudinal axis. Rollovers in which the vehicle is rotating primarily about the lateral axis should be coded as Rollover - end-over-end (i.e., primarily about the lateral axis).

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No rollover Used if uncertainty exists concerning whether or not this vehicle rolled over. In addition, use this attribute if a trailer attached to the vehicle rolled over but the vehicle itself did not.	1	1
2 Trip-over Selected when the vehicle's lateral motion is suddenly slowed or stopped, inducing a rollover. The opposing force may be produced by a curb, pot-holes, or pavement/soil dug into by a vehicle's wheels.	2	2
3 Flip-over Selected when the vehicle is rotated about its longitudinal axis by a ramp-like object may be in a yaw when it comes in contact with the ramp-like object. For example, if the vehicle traveling forward climbs the down turned end of a guardrail and rolls over about its longitudinal axis, use this code. To use this, the vehicle's roll need not begin on the ramp-like structure or object, For example, if the vehicle transverses the turned-down end of a guardrail, continues along the level portion, then rolls back toward the side of the guardrail from which it came, use this code.	3	3
4 Turn-over (specify) : Selected when centrifugal forces from a sharply turning or rotating vehicle produce a rollover when resisted by normal surface friction. This type of rollover is more likely to occur in vehicles with a higher center of gravity than most passenger vehicles. The surface type includes pavement surfaces plus gravel, grass, dirt, etc. The distinction between Turn-over and Trip-over is that no furrowing, gouging, etc. occurs to the surface at the point of trip. In addition, see remarks for Fall-over below. When turnover is selected, the justification must be entered. This attribute does not include cargo shift; code cargo shift under cargo shift.	4	4

Trip-Over:
The vehicle's lateral motion is resisted by opposing force, inducing roll moment.

Example 1

Roll

Pre-Roll Motion

Curb

Example 2

Roll

Pre-Roll Motion

Flat Surface

Example 3

Roll

Pre-Roll Motion

Soft Soil

Example 4

Roll

Pre-Roll Motion

Ascending Slope

Flip-Over

Forward moving vehicle is vigorously rotated about its longitudinal axis by a ramp-like object such as a guardrail taper or ditch back slope.
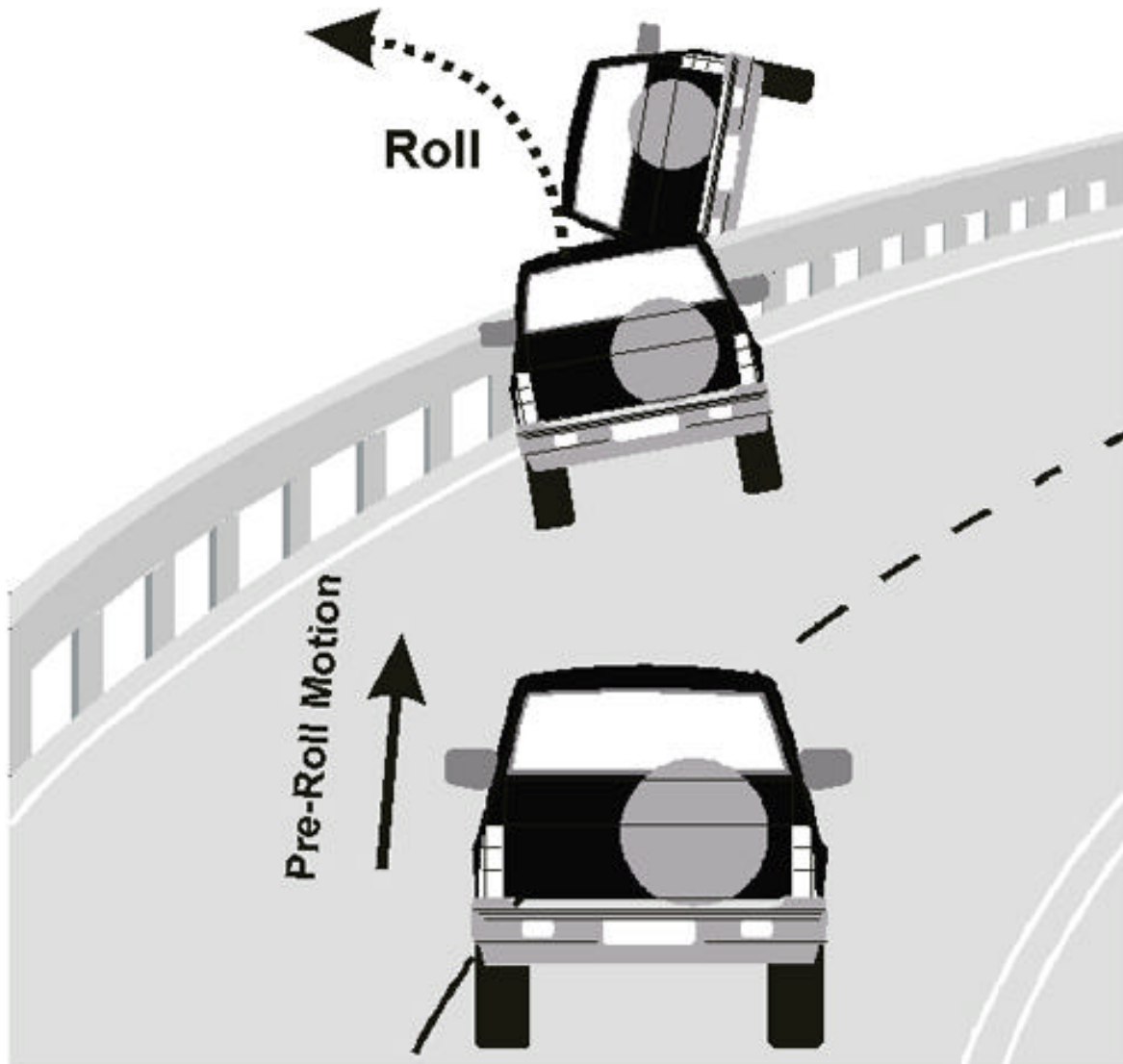
Example 1

Roll

Pre-Roll Motion

Example 2

Roll

Steep Hillside

Pre-Roll Motion
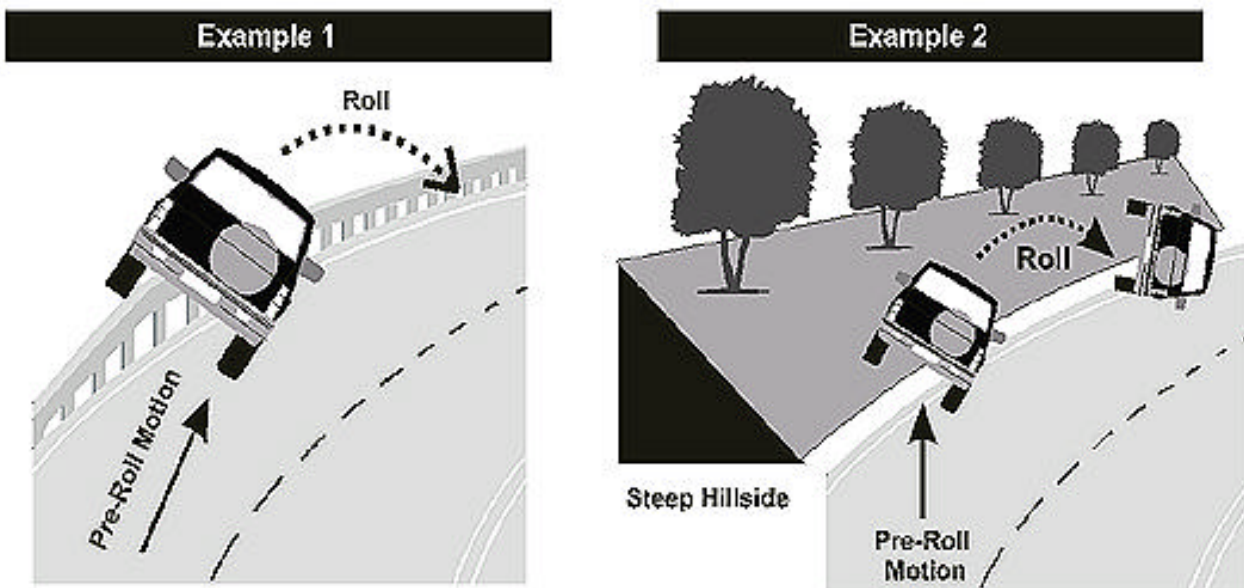
Turn Over:

Centrifugal forces from a sharply turning or rotating vehicle produce a rollover moment when resisted by surface friction.

Pre-Roll Motion
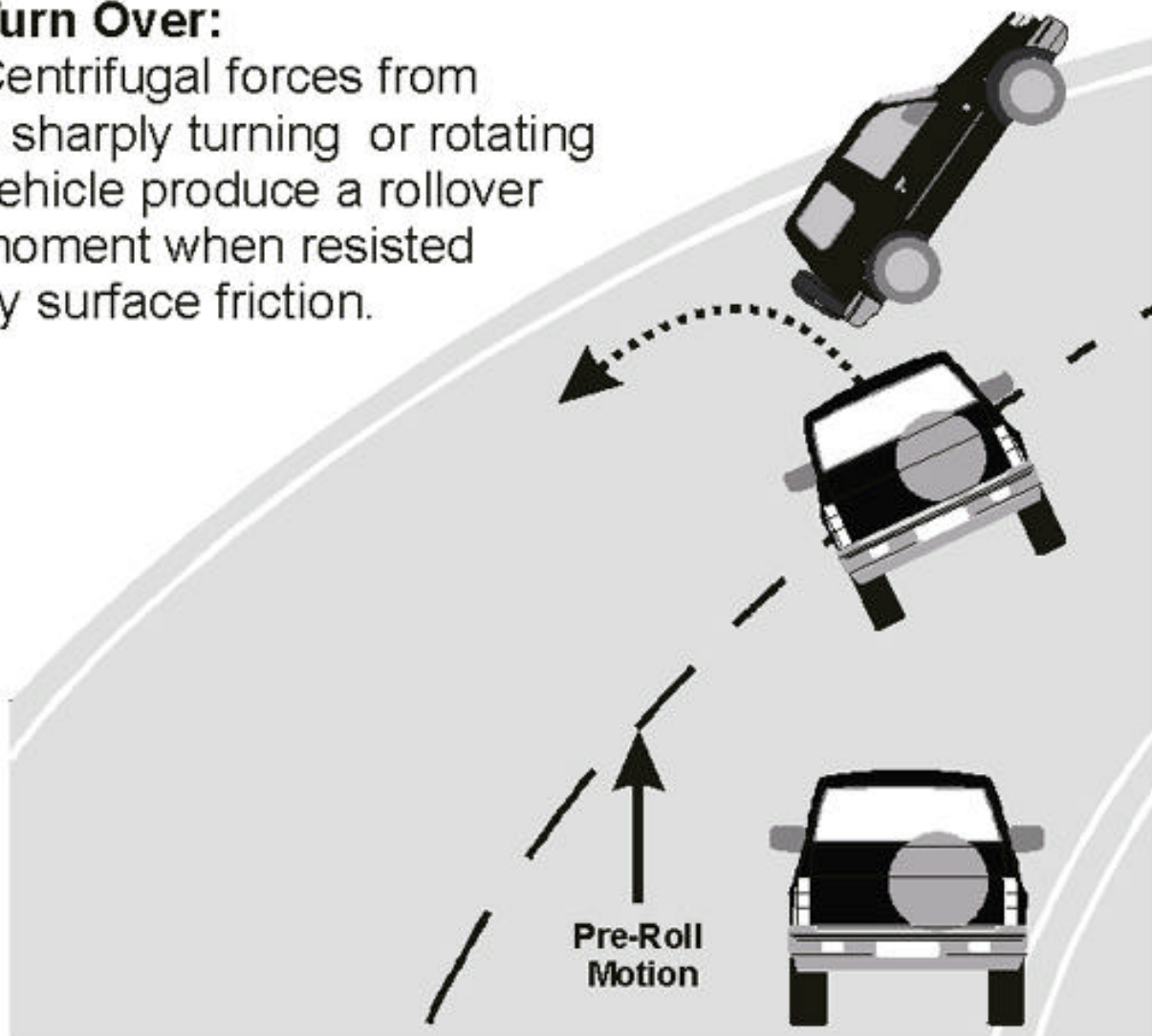
Climb-Over
Vehicle climbs up and over fixed object such as a guardrail

Roll

Pre-Roll Motion

Fall-Over

Vehicle is tipped by slope so that
its center of gravity is outboard
of its wheels

Roll

Center
of Gravity
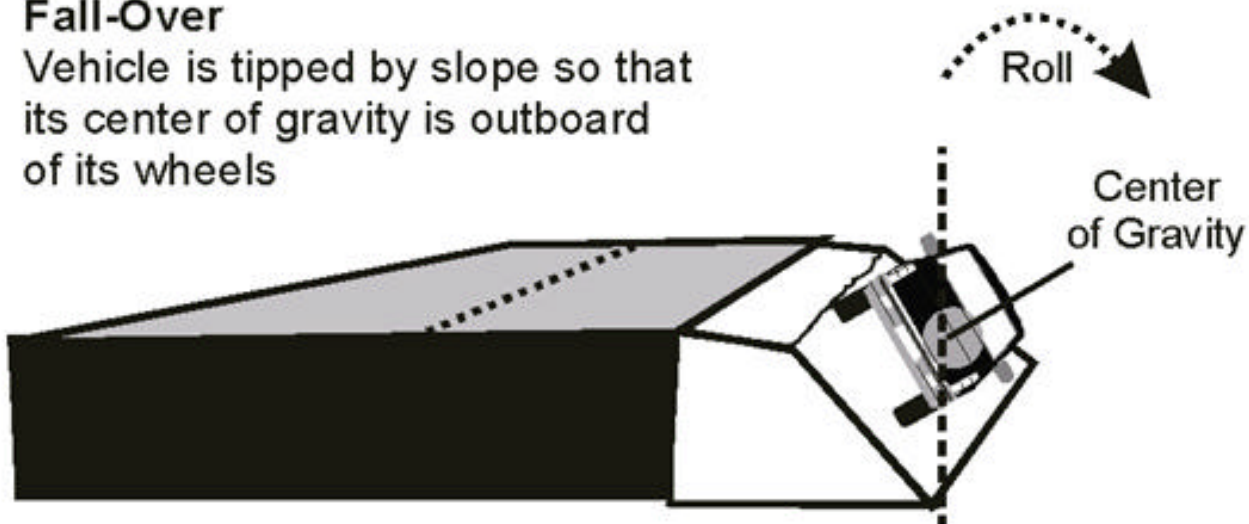
Bounce-Over:

Any case where the vehicle
rebounds off a fixed object
(such as a guardrail)
and overturns as
a consequence.

Roll

Pre-Roll Motion

Form Screen Name: **Type of rollover initiation**   117

  Oracle Variable: VEHICLE.ROLL_INIT_TYPE   1681

		Oracle Value	SAS Value

Element Attributes:

5   Climb-over   5   5

Selected when a vehicle climbs up and over a fixed object such as a barrier or guardrail. The object should be high enough to lift the vehicle completely off the ground (i.e., the height should exceed the radius of the vehicle's largest diameter wheel). The vehicle must roll to the opposite side from which it approached the object.

6   Fall-over   6   6

Selected when the surface the vehicle is traversing slopes downward in the direction of movement of the vehicle's center-of-gravity such that the vehicle's center of gravity becomes outboard of its wheels. The distinction between this and Turn-over above involves the negative slope of the traversed surface. If the rotation and/or the surface friction causes the trip, then use Turn-over, however, if the slope is so negative that a line straight downward through the vehicle's center-of-gravity (as shown in the illustration) would fall outside the vehicle's track, then use this attribute. For example, if a vehicle goes off the road and encounters a substantial surface drop off because of the elevated nature of the road in relation to its environment (e.g., cliff, ditch, etc.), then use this attribute.

7   Bounce-over   7   7

Selected when a vehicle deflects off of a fixed object (such as a guardrail, barrier, tree, or pole) or a not-in-transport vehicle such that the vehicle's rotation causes it to overturn. The deflection momentum contributes to a rollover. To use this attribute, the rollover must occur in close proximity to the object from which it deflected. For example, if a vehicle strikes a center median barrier and rotates across two traffic lanes prior to the vehicle rolling over, then Trip-over or Turn-over would apply.

8   Collision with another vehicle   8   8

Selected when an impact with another vehicle causes the rollover. The rollover must be the immediate result of the impact between the vehicles (e.g., intersection crashes where a vehicle is struck in the side and the momentum of the struck vehicle results in the rollover, or offset end-to-end type crashes when one vehicle will vault over the tapered end of another vehicle resulting in a rollover). Otherwise use attributes above. For example, if a vehicle is struck in the side and the vehicle rotates and does not produce any wheel/rim gouges or furrows in the surface nor encounters any prominent raised objects (e.g., a high curb) and overturns in close proximity to the point of impact, then use this attribute.

9   Other rollover initiation type (specify) :   9   9

Selected when this vehicle's rollover initiation type cannot be described above. Whenever this is used, the researcher is required to specify the type of rollover which occurred.

10   Cargo shift   10   10

This attribute is used only when there is definitive evidence that cargo shift is the predominant cause of the rollover. The cargo shift must occur prior to the rollover event. Coding of this attribute requires very careful questioning of the driver or occupants of the rollover vehicle.

Form Screen Name: **Type of rollover initiation**   118

  Oracle Variable: VEHICLE.ROLL_INIT_TYPE   1681

		Oracle Value	SAS Value
Element Attributes:			
11	Rollover--end-over-end (i.e., primarily about the lateral axis) Selected when the rollover is mainly end-over-end. This attribute is used when a rollover is a combination of a side-to-side and end-over-end roll and it cannot be determined which type of rollover is most prevalent. This attribute will be automatically entered in the electronic system when the "Direction of initial roll" is end-over-end.	11	11
9999	Unknown rollover initiation type Selected when the type of rollover initiation is unknowr	-9999	9999

  Sources:

VEHICLE INSPECTION
SCENE INSPECTION

Form Screen Name: **Number of lateral quarter turns**

Oracle Variable: VEHICLE.QUARTER_TURNS   6346

Screen Name: Number of lateral quarter turns

Form # - Name: 55 -

SAS Data Set:

SAS Variable:

Remarks:
   Determine the number of quarter turns the vehicle experienced in the rollover. This number should be determined from all possible sources; scene evidence, vehicle damage, driver interview, witness interviews and PAR.

Range:

 Method: Enter Number of Quarter Turns _____

Element Attributes:	Oracle Value	SAS Value
9997 Not applicable	-9997	9997
No lateral axis rollover.		
9999 Unknown	-9999	9999
Unknown number of lateral quarter turns. Unable to determine from scene or vehicle inspection, interview or PAR.		

 Sources:
         VEHICLE INSPECTION
         SCENE INSPECTION
         DRIVER INTERVIEW

Form Screen Name: **Presence of fire**

Oracle Variable: VEHICLE.FIRE   1686

Screen Name: Presence of fire

Form # - Name: 56 - Did your vehicle catch fire?

SAS Data Set:

SAS Variable:

Remarks:

The fire can occur at any point before or after the impact sequence begins

As it pertains to the occurrence of fire, the crash circumstances are not considered stabilized until the threat of damage to this vehicle, or injury consequences to this vehicle's occupants, has ceased. Therefore, the crash sequence is not considered stabilized until all occupants have exited the vehicle and the scene has been declared safe by police or other authority. Fires that occur at a later time to vehicles abandoned at the scene (e.g., in open fields, on hillsides, etc) or to vehicles removed from the scene to another location (towyard, curbside, etc.) are not considered part of the crash sequence.

Range:

Method: Fill a single item

Element Attributes:		**Oracle Value**	**SAS Value**
1	No	1	1
	Use this when this vehicle had no fire involvement.		
2	Yes	2	2
	Select Yes if a fire occurred in the vehicle.		
8888	No driver present	-8888	8888
9997	Not applicable	-9997	9997
9999	Unknown	-9999	9999
	Used when it cannot be determined if this vehicle. had any fire involvement e.g., a fire was reported, but this vehicle was repaired prior to inspection and it cannot be determined if this vehicle was involved in the fire.		

Sources:

VEHICLE INSPECTION

Form Screen Name: Fire ignition time   121

Oracle Variable: VEHICLE.FIRE_IGNITION_TIME   4161

Screen Name: Fire ignition time

Form # - Name: 57 - (If applicable) Did the fire ignite before or after impact? If before, specify when.

SAS Data Set:

SAS Variable:

Remarks:
Determine if the fire started pre- or post-impact. If the fire began prior to any impact, note circumstances in the specify box.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Pre-impact ignition (specify time before crash) minutes_____ The fire began prior to any impact for this vehicle. This includes noncollision events such as jackknife and rollover.	1	1
2 Post impact Fire began after first impact to this vehicle including jackknife and rollover.	2	2
9 Fire presence, unknown time of ignition This vehicle had a fire but it cannot be determined when the fire began.	9	9
9997 Not applicable Used when there is no fire.	-9997	9997
9999 Unknown Use this attribute when it cannot be determined if there was a fire.	-9999	9999

Sources:
VEHICLE INSPECTION

Form Screen Name: Fire origin

Oracle Variable: VEHICLE.FIRE_ORIGIN   1687

Screen Name: Fire origin

Form # - Name: 58 -

SAS Data Set:

SAS Variable:

Remarks:
   The level of the fire is captured in this variable.
   In order to classify fire damage, a fire must have occurred to this vehicle. The fire can occur at any point in or before the impact sequence.
   As it pertains to the occurrence of fire, the crash circumstances are not considered stabilized until the threat of damage to this vehicle, or injury consequences to this vehicle's occupants, has ceased. Therefore, the crash sequence is not considered stabilized until all occupants have exited the vehicle and the scene has been declared safe by police or other authority. Fires that occur at a later time to vehicles abandoned at the scene (e.g., in open fields, on hillsides, etc) or to vehicles removed from the scene to another location (towyard, curbside, etc.) are not considered part of the crash sequence.

Range:
   Same as PRE_IMPACT_FIRE_ORIGIN

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No fire	1	1
Used when this vehicle was not involved in any fire event.		
2 Vehicle interior	2	2
3 Exhaust system	3	3
4 Fuel tank (and other fuel retention system parts)	4	4
5 Engine compartment	5	5
8 Other (specify) :	8	8
9999 Unknown	-9999	9999

Sources:
           OBSERVATION

Form Screen Name: **Police reported alcohol presence**

Oracle Variable: OFFICIALRECORDS.PAR_ALCOHOL_PRES   890

Screen Name: Police reported alcohol presence

Form # - Name: 59 -

SAS Data Set:

SAS Variable:

Remarks:

Record the PAR information about alcohol presence. Examine the PAR carefully as this information may be in a check box, written code or in the narrative notes.

Range:

Method: Fill a single item

	Element Attributes:	Oracle Value	SAS Value
1	No alcohol present	1	1
	Police report gives indication that no alcohol was present for this driver. This must be a positive indicator (i.e. PAR must indicate no alcohol if variable is present).		
2	Yes - alcohol present	2	2
	Police indicate on PAR that this driver had alcohol presence, either by test, odor or presence of open containers in vehicle.		
3	Not reported	3	3
	Police do not report presence or absence on PAR.		
8888	No driver present	-8888	8888
9999	Unknown	-9999	9999
	Police are not specific about alcohol presence. Alcohol variable on PAR is blank and no mention is made of presence or absence.		

Sources:

PAR

Form Screen Name: BAC Test Result   124

Oracle Variable: DRIVER_HEALTH.ALCOHOL_TEST_RESULT   908

Screen Name: BAC Test Result

Form # - Name: 60 -

SAS Data Set:

SAS Variable:

Remarks:
　　　Test results from medical records or PAR.

Range:
　　　Range 0- 0.65; Warning >0.33; Test performed, results unknown; No test; No driver present

Method: Enter a value _____

Element Attributes:		Oracle Value	SAS Value
8888	No driver present	-8888	8888
9996	No test performed	-9996	9996
9997	BAC test performed, results unknown Coded in instances when the researcher can determine a BAC test was performed but is unable to obtain the results.	-9997	9997
9999	Unknown	-9999	9999

Sources:
　　　　MEDICAL RECORDS
　　　　PAR

Form Screen Name: **BAC Test Time (HH:MM)**   125

Oracle Variable: DRIVER_HEALTH.ALCOHOL_TEST_TIME   925

Screen Name: BAC Test Time (HH:MM)

Form # - Name: 61 -

SAS Data Set:

SAS Variable:

Remarks:
   Record the time of BAC test administration. This information may be difficult to obtain. Examine all records for the time of the blood draw or breath test.   This time may be found on medical records, PARs or other official records

Range:

Method: Enter time _____:_____

Element Attributes:		**Oracle Value**	**SAS Value**
8888	No driver present	-8888	8888
9996	No test performed	-9996	9996
9997	Not applicable	-9997	9997
9999	Unknown	-9999	9999

Sources:
   MEDICAL RECORDS
   PAR

Form Screen Name: **BAC Test Source Official Records**   126

Oracle Variable: DRIVER_HEALTH.ALCOHOL_TEST_SOURCE   921

Screen Name: BAC Test Source Official Records

Form # - Name: 62 -

SAS Data Set:

SAS Variable:

Remarks:
   This element value documents the source of BAC test results.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No BAC test Used when no BAC test has been administered.	1	1
2 Medical Record Used when the source of the BAC test is a medical record (including autopsy report)	2	2
3 Police Reported Used when the BAC test result is reported on the police report or in the investigating officer's supplementary notes.	3	3
4 Other (specify) : Used when test results are obtained from sources other than the police report and medical records.	4	4
8888 No driver present	-8888	8888
9996 No test performed	-9996	9996
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:
   RESEARCHER ASSESSMENT
   REVIEWER ASSESSMENT

Form Screen Name: **Police reported drug presence**

Oracle Variable: OFFICIALRECORDS.PAR_DRUG_PRES   3171

Screen Name: Police reported drug presence

Form # - Name: 63 -

SAS Data Set:

SAS Variable:

Remarks:
    The phrase "other drug present" includes all prescription, "over-the-counter" medications, as well as "illicit" substances (e.g., in most cases, marijuana, cocaine, heroin), . Also, "other drug present" means that the driver had ingested an other drug prior to the crash, but it is not an indication that the drug usage was in any way the cause of the crash (or event), even though it may have been. Finding other drugs in the vehicle does not by itself constitute presence. This element value documents presence of illegal drugs in the driver's system. Code all reported drugs. Entries should be recorded in the order of concentration (i.e., the drug appearing at the highest concentration level should be recorded first). If concentration levels are unknown, record drugs in alphabetical order. A "presumptive" coding approach is used with respect to this variable. Specifically, it is assumed that illegal drugs are not involved unless there are positive test results or other official records indicating involvement. In this circumstance, Researcher field observations and the observations of other on-scene personnel (i.e., police officers, EMTs, and truck inspection personnel) may be used as a basis for coding unknown (99) in the absence of test results and/or other official records.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No Used when the PAR indicates no illegal drugs are used by this driver.	1	1
2 Yes (specify) : Used when drugs are indicated for this driver. Record drug under DRUGTYPE variable.	2	2
3 Yes - none specified Used when drugs are noted for this driver but type(s) are unknown.	3	3
8888 No driver present	-8888	8888
9999 Unknown	-9999	9999

Sources:

        PAR

Form Screen Name: Posted speed limit   128

Oracle Variable: OFFICIALRECORDS.SPEED_LIMIT   884

Screen Name: Posted speed limit

Form # - Name: 64 -

SAS Data Set:

SAS Variable:

Remarks:
    This variable should be determined through the scene inspection. Secondary source is the PAR but the value shouldbe verified through at least one other source in addition to the PAR.

Range:

 Method: Enter value in mph ___ ___

	Element Attributes:	Oracle Value	SAS Value
1	No statutory limit	1	1
8888	No driver present	-8888	8888
9999	Unknown	-9999	9999

 Sources:
        SCENE INSPECTION
        PAR

Form Screen Name: **Advisory speed limit**

Oracle Variable: OFFICIALRECORDS.ADVISORY_LIMIT   885

Screen Name: Advisory speed limit

Form # - Name: 65 -

SAS Data Set:

SAS Variable:

Remarks:

When inspecting the scene, look for advisory speed limit signs. The signs will usually be present in areas presenting hazards such as slopes, curves, school zones, blind intersections, etc. Search the scene for signs that may have been knocked down in the crash.

Range:

Method: Enter value in mph ___ ___

Element Attributes:		**Oracle Value**	**SAS Value**
1	No advisory sign	1	1
8888	No driver present	-8888	8888
9999	Unknown	-9999	9999

Sources:

SCENE INSPECTION
PAR

Form Screen Name: **Police reported travel speed**

Oracle Variable: OFFICIALRECORDS.PAR_TRAVEL_SPEED   883

Screen Name: Police reported travel speed

Form # - Name: 66 -

SAS Data Set:

SAS Variable:

Remarks:

Enter the PAR reported travel speed when present. This value may be a field on the PAR or the value may be entered in the narrative. If the PAR indicates a range (e.g. 45-50 mph) enter 47.

Range:

 Method: Enter value in mph ___ ___

Element Attributes:	Oracle Value	SAS Value
8888 No driver present	-8888	8888
9996 Not reported	-9996	9996
9999 Unknown	-9999	9999

Sources:

PAR

Form Screen Name: PAR KABCO rating

Oracle Variable: OFFICIALRECORDS.KABCOU   882

Screen Name: PAR KABCO rating

Form # - Name: 67 - PAR KABCO rating

SAS Data Set:

SAS Variable:

Remarks:

This variable will have the attribute selected by the system based on the coding of the Occupant PAR KABCO rating.

Range:

Method: Fill a single item

Element Attributes:		**Oracle Value**	**SAS Value**
1	O - No injury	1	1
2	C - Possible injury	2	2
3	B - Non-incapacitating injury	3	3
4	A - Incapacitating injury	4	4
5	K - Killed	5	5
6	U - Injury, severity unknown	6	6
7	Died prior to crash	7	7
9999	Unknown	-9999	9999

Sources:

Form Screen Name: **Police reported belt use**   132

Oracle Variable: OFFICIALRECORDS.POL_BELTUSE   2265

Screen Name: Police reported belt use

Form # - Name: 68 -

SAS Data Set:

SAS Variable:

Remarks:
    Police Reported Belt Use

Range:

Method: Fill a single item

	Element Attributes:	**Oracle Value**	**SAS Value**
1	None Used	1	1
2	Police did not indicate belt use	2	2
3	Shoulder Belt	3	3
4	Lap Belt	4	4
5	Lap and shoulder belt	5	5
6	Belt used, type not specified	6	6
8	Automatic belt	8	8
9	Other type belt (specify) :	9	9
10	Police indicated 'unknown'	10	10
8888	No driver present	-8888	8888

Sources:
        PAR

Form Screen Name: **Police reported tow status**

Oracle Variable: OFFICIALRECORDS.PARTOWED   72

Screen Name: Police reported tow status

Form # - Name: 69 -

SAS Data Set:

SAS Variable:

Remarks:

The tow status as indicated in this variable is the same tow status that was used in determining the case stratification. A "towed" vehicle is defined as a vehicle which is removed from the crash scene other than by means of its own power. For example, a vehicle which is reported by the police as towed out of a ditch and subsequently driven away, is not considered a towed vehicle.

A vehicle which is driven from the scene and subsequently becomes disabled due to crash-related damage, such that towing is then required, is not a towed vehicle (even though that towing may be reported on the police report). Carefully scrutinize the PAR to determine the disposition of the vehicle directly from the scene and, if towing is indicated, the reason for the towing. If after the crash, a vehicle is pushed (by hand or by another vehicle) then consider the vehicle as a towed vehicle.

When a police report indicates that more than one event has occurred (i.e., stabilization is apparent), the disposition of this vehicle is based upon the event sequence selected for stratification. In other words, if the PAR indicates this vehicle was towed from the scene, and a researcher determines from the PAR that towing was not due to the damage sustained during this sequence, the correct response for this variable s Not towed due to vehicle damage.

When the PAR indicates that this vehicle was towed from the scene and it cannot be determined whether or not the towing was due to damage, the default response for this variable is Towed due to vehicle damage.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Not towed due to vehicle damage Selected when: --the PAR indicates this vehicle was not towed from the scene, or --the PAR indicates this vehicle was towed from the scene but not due to crash-related disabling damage.	1	1
2 Towed due to vehicle damage Selected when: --the PAR indicates this vehicle was towed from the scene due to crash-related disabling damage or --the PAR indicates this vehicle was towed from the scene and a researcher cannot determine (from the PAR) if the towing was due to crash-related disabling damage.	2	2
9999 Unknown Select this attribute when the investigating officer reported that the disposition of the vehicle was unknown at the time the PAR was completed. Also, use this attribute if the PAR indicates the vehicle was abandoned. However, if the police report specifies that the vehicle was disabled due to crash-related damage, as well as indicating "unknown" , "abandoned" or blank for the disposition, it can be assumed that the vehicle will eventually be towed from the scene. In these instances, enter Towed due to vehicle damage	-9999	9999

Sources:

        PAR

Form Screen Name: **Pre-impact stability of vehicle**   134

Oracle Variable: PRECRASHVEHICLE.STABILITY   1381

Screen Name: Pre-impact stability of vehicle

Form # - Name: 70 -

SAS Data Set:

SAS Variable:

Remarks:

The purpose of this variable is to assess the stability of the vehicle after the critical event. The stability of the vehicle prior to an avoidance action is not considered except in the following situation: A vehicle that is out of control (e.g., yawing clockwise) prior to an avoidance maneuver is coded Other control loss (specify) only if an avoidance action was taken in response to an impending danger. Thus, this variable focuses upon this vehicle's dynamics after the critical event.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Tracking/stationary	1	1
Used whenever there is no brake lockup and the vehicle continues along its intended path without rotation. Stopped, slowing, turning, or accelerating to avoid a rear-end collision are examples.		
2 Skidding longitudinally->rotation less than 30 degrees	2	2
Used whenever there is brake lockup or whenever skid marks are apparent without brake lockup (braking or non-braking) and rotation is less than 30 degrees clockwise or counterclockwise. If there is no information to support rotation greater than or equal to 30 degrees, then use this element.		
3 Skidding laterally->clockwise rotation	3	3
Used whenever the vehicle rotates clockwise, relative to the driver's seating position. The vehicle must rotate 30 degrees or more. This element also applies when the driver attempts a steering input (ie. swerves right), but the vehicle rotates clockwise.		
4 Skidding laterally->counterclockwise rotation	4	4
Used whenever the vehicle rotates counterclockwise, relative to the driver's seating position. The vehicle must rotate 30 degrees or more. This element also applies when the driver attempts a steering input (i.e. swerves left), but the vehicle rotates counterclockwise.		
5 Other control loss (specify) :	5	5
8888 No driver present	-8888	8888
Used when no driver is present in the vehicle at the time it was involved in the crash.		
9999 Pre-crash stability unknown	-9999	9999
Used whenever the stability of the vehicle (after the critical event) cannot be determined.		

Sources:

SCENE INSPECTION
REVIEWER ASSESSMENT

Form Screen Name: **Pre-impact location on trafficway**   135

Oracle Variable: PRECRASHVEHICLE.LOCATION   1382

Screen Name: Pre-impact location on trafficway

Form # - Name: 71 - Where was your vehicle just prior to the first impact?

SAS Data Set:

SAS Variable:

Remarks:

This variable reports the location of the subject vehicle prior to impact. The responses for this variable must relate directly to the response coded for pre-impact stability.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Stayed in original travel lane	1	1
Used whenever the vehicle remains within the boundaries of its initial travel lane. The perimeter of the vehicle is to be considered when determining the vehicle's status within its travel lane.		
2 Stayed on roadway but left original travel lane	2	2
Coded whenever the "majority" of the vehicle departs its initial travel lane; however, the "majority" of the vehicle remains within the boundaries of the roadway (travel lanes). The perimeter of the vehicle is to be considered when determining the vehicles status within the roadway.		
3 Stayed on roadway, not known if left original travel lane	3	3
Used whenever it cannot be ascertained whether the "majority" of the vehicle remains within its initial travel lane. To use this code, the "majority" of the vehicle must remain within the boundaries of the roadway.		
4 Departed roadway	4	4
Used whenever the "majority" of the vehicle departs the roadway as a result of a precrash motion. The roadway departure must not be related to the post impact trajectory of a crash within the roadway.		
5 Remained off roadway	5	5
Used whenever the precrash motion occurs outside the boundaries of the roadway. This includes traveling on the shoulders, within the median, on the roadside, or off the trafficway.		
6 Returned to roadway	6	6
Used whenever the "majority" of the vehicle is on the roadway, departs the roadway and then returns to the roadway during precrash motion.		
7 Entered roadway	7	7
Used whenever the vehicle is not previously on the roadway and then the majority of the vehicle enters the roadway during precrash motion.		
8888 No driver present	-8888	8888
Used when no driver is present in the vehicle at the time it is involved in the crash.		
9999 Unknown	-9999	9999
Used whenever the precrash motion of the vehicle cannot be determined		

Sources:

SCENE INSPECTION

Form Screen Name: **Did this vehicle have right of way**

Oracle Variable: PRECRASHVEHICLE.RIGHT_OF_WAY   1383

Screen Name: Did this vehicle have right of way

Form # - Name: 72 -

SAS Data Set:

SAS Variable:

Remarks:

     This variable establishes vehicle right-of-way characteristics, from a legal perspective, for the subject vehicle. Specifically, did this vehicle have the right-of-way? Appropriate responses may require interpretation of both State Vehicle and Traffic laws as well as local ordinances.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No Used when the subject vehicle does not have the right-of-way as defined from a legal perspective.	1	1
2 Yes Used when the subject vehicle has the right-of-way as defined from a legal perspective.	2	2
8888 No driver present	-8888	8888
9997 Not Applicable Used when right-of-way considerations are not applicable to the circumstances of this crash. An example would be the front-to-rear impact sequence. Right-of-way issues are typically not applicable to this crash type. A second example would be the single vehicle roadway departure crash scenario (i.e., right-of-way considerations are not applicable to this crash type).	-9997	9997
9999 Unknown Used when there is insufficient information to determine right-of-way considerations.	-9999	9999

Sources:

      SCENE INSPECTION
      REVIEWER ASSESSMENT

Form Screen Name: Pre-crash cargo spillage   137

Oracle Variable: PRECRASHVEHICLE.PRE_CRASH_SPILL   3228

Screen Name: Pre-crash cargo spillage

Form # - Name: 73 -

SAS Data Set:

SAS Variable:

Remarks:

    This element value establishes the occurrence of cargo spillage during the pre-crash phase.

Range:

Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	No cargo	1	1
	Reserved for circumstances where the vehicle configurations are not regarded as legitimate "over-the-road" configurations, and for vehicles that are carrying no cargo.		
2	No precrash cargo spillage	2	2
	Used when this vehicle is carrying cargo, but does not experience a precrash loss of any cargo.		
3	Yes (specify) :	3	3
	Used when pre-crash cargo spillage occurs. Specify the type of cargo that spilled and the total proportion of the cargo that spilled.		
8888	No driver present	-8888	8888
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine if precrash cargo spillage occurred.		

Sources:

    VEHICLE INSPECTION
    REVIEWER ASSESSMENT

Form Screen Name: **Lighting**   138

Oracle Variable: PRECRASHVEHICLE.NATURAL_LIGHTING   218

Screen Name: Lighting

Form # - Name: 74 -

SAS Data Set:

SAS Variable:

Remarks:
   The light condition best representing the precrash conditions at the time of the crash is selected based on ambient and artificial sources.

Range:
   1-5, 9999

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Daylight	1	1
2 Dark Used when the crash occurred after dusk and before dawn, and no artificial light source is present at the scene. This includes crashes occurring in tunnels or in underpasses.	2	2
3 Dark, but lighted (opens lighting type for each roadway) Used when the crash occurred after dusk and before dawn, and artificial light source(s) are present at the scene. This includes crashes occurring in tunnels or in underpasses.	3	3
4 Dawn	4	4
5 Dusk	5	5
9999 Unknown Used when it cannot be reasonably determined what the light conditions were at the time of the crash.	-9999	9

Sources:

Form Screen Name: Travel Lane   139

Oracle Variable: PRECRASHVEHICLE.TRAVEL_LANE   1967

Screen Name: Travel Lane

Form # - Name: 75 - In which lane were you traveling?

SAS Data Set:

SAS Variable:

Remarks:
   This variable assesses the location of the vehicle prior to the critical envelope. Select the attribute which best describes the predominant lane of the vehicle during that time period.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Lane one (right curb lane) Right curb or road edge lane in direction of traffic flow.	1	1
2 Lane two Second lane counting from right curb or road edge lane in direction of traffic flow.	2	2
3 Lane three Third lane counting from right curb or road edge lane in direction of traffic flow.	3	3
4 Lane four Fourth lane counting from right curb or road edge lane in direction of traffic flow.	4	4
5 Other (specify) : Specify the lane (counting from right curb or road edge lane in direction of traffic flow) if above categories do not apply.	5	5
8888 No driver present No driver present at time of crash.	-8888	8888
9997 Not applicable	-9997	9997
9999 Unknown Used if it is unknown which lane the vehicle was in prior to entering the critical envelope.	-9999	9999

Sources:

   SCENE INSPECTION

Form Screen Name: **Relation to junction**

Oracle Variable: PRECRASHVEHICLE.RELATION_TO_JUNCTION   1345

Screen Name: Relation to junction

Form # - Name: 76 -

SAS Data Set:

SAS Variable:

Remarks:

A junction is, in general, the area formed by the connection of two roadways. It includes: (1) all at-grade intersections [ANSI D16.1 - 1989 section 2.5.11, page 22], (2) connections between a driveway access or alley access and a roadway which is not a driveway access or an alley access, (3) connections between two alley assesses or driveway access, or (4) a connection between a driveway access and an alley access.

An interchange is the area around a grade separation (ANSI D16.1 - 1989, section 2.5.14) which involves at least two trafficways. Included within its boundaries are: (1) all ramps which connect the roadways; and (2) each roadway entering or leaving the interchange to a point 30 meters (100 feet) beyond the gore or curb return at the outermost ramp connection for the roadway. Included within an interchange area are intersections, driveway accesses, and roadway sections which are non-junction.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Non-junction Used when this vehicle's environment just prior to the critical precrash event is a noninterchange area and is not within an intersection or related to an intersection.	1	1
2 Intersection Used when this vehicle's environment just prior to the critical precrash event is in a noninterchange area, is in an intersection, and results from an activity, behavior, or control related to the movement of traffic units through the intersection.	2	2
3 Intersection related Used when this vehicle's environment just prior to the critical precrash event is in a noninterchange area, is in an approach to or exit from on intersection, and results from an activity, behavior, or control related to the movement of traffic units through the intersection.	3	3
4 Driveway, alley access, etc. Used when this vehicle's environment just prior to the critical precrash event is in an noninterchange area, is in a driveway or alley access, and results from an activity or behavior related to the movement of traffic units through the driveway/alley access.	4	4
5 Entrance/exit ramp related Used when this vehicle's environment just prior to the critical precrash event is in a noninterchange area; is in an approach to exist from, or on an entrance/exit ramp; and results from an activity or behavior related to movement of traffic units through the ramp.	5	5
6 Rail grade crossing Used when this vehicle's environment just prior to the critical precrash event is in a noninterchange area an is either in, approaching, or exiting from a rail grade crossing.	6	6

Form Screen Name: Relation to junction   141

  Oracle Variable: PRECRASHVEHICLE.RELATION_TO_JUNCTION   1345

		Oracle Value	SAS Value
Element Attributes:			
7	In crossover	7	7

Used when this vehicle's environment just prior to the critical precrash event is in a noninterchange area and is in a crossover. A crossover is a designated opening within a median used primarily for "U" turns. To be considered, the nearest lateral boundary line of the crossover must be greater than 10 meters (33 feet) from the nearest lateral boundary line of any roadway which intersects with either of the roadways which the median divides.

8	Unknown, non interchange	8	8

Used when this vehicle's environment just prior to the critical precrash event is in a noninterchange area, however, there is insufficient information to establish other relevant characteristics of the location.

9	Intersection	9	9

Used when this vehicle's environment just prior to the critical precrash event is in an interchange area, is in an intersection, and results from an activity, behavior, or control related to the movement of traffic units through the intersection.

10	Intersection related	10	10

Used when this vehicles' environment just prior to the critical precrash event is in an interchange area, is in an approach to or exit from an intersection, and results from an activity, behavior or control related to the movement of traffic units through the intersection.

11	Driveway, alley access, etc.	11	11

Used when this vehicle's environment just prior to the critical precrash event is in an interchange area, is in a driveway, and results from an activity or behavior related to the movement of traffic units through the driveway or similar type of access.

12	Entrance/exit ramp related	12	12

Used when this vehicle's environment just prior to the critical precrash event is in an interchange, is in an approach to, exit from, or on an exit/entrance ramp; and results from an activity or behavior related to movement of traffic units through the ramp.

13	In crossover	13	13

Used when this vehicle's environment just prior to the critical precrash event is in an interchange an is in a crossover. A crossover is a designated opening within a median used primarily for "U" turns. To be considered, the nearest lateral boundary line of the crossover must be greater than 10 meters (33 feet) from the nearest lateral boundary line of any roadway which intersects with either of the roadways which the median divides.

14	Other location in interchange (specify) :	14	14

Used when this vehicle's environment just prior to the critical precrash event is in an interchange and is in a location other than is specified by codes 10- 14 above.

15	Unknown, interchange area	15	15

Used when this vehicle's environment just prior to the critical precrash event is in an interchange area, however, there is insufficient information to establish other relevant characteristics of the location.

Form Screen Name: **Relation to junction**

Oracle Variable: PRECRASHVEHICLE.RELATION_TO_JUNCTION   1345

	Oracle Value	SAS Value
Element Attributes:		
9999 Unknown	-9999	9999

Used when there is insufficient information to determine this vehicle's environment just prior to the critical precrash event. This code should be never be used in NMVCCS.

Sources:

SCENE INSPECTION

Form Screen Name: **Relation to roadway**   143

Oracle Variable: PRECRASHVEHICLE.RELATION_ROADWAY   1344

Screen Name: Relation to roadway

Form # - Name: 77 -

SAS Data Set:

SAS Variable:

Remarks:
> The element value selected is based on the characteristics of this vehicle's roadway environment just prior to the critical precrash event.

Range:

Method: Fill a single item

	Element Attributes:	Oracle Value	SAS Value
1	On roadway	1	1
	Used when this vehicle's location just prior to the critical precrash event is within a designated travel lane.		
2	Shoulder	2	2
	Used when this vehicle's location just prior to the critical precrash event is on the shoulder of the roadway. The shoulder area does not have to be paved to be considered a shoulder. This area, however, must be stabilized and graded. Non-stabilized areas adjacent to the roadway are considered to be the part of the roadside area.		
3	Median	3	3
	Used when this vehicle's location just prior to the critical precrash event is in the median strip that physically divides the trafficway. The division may be unprotected (e.g., vegetation, gravel, paved medians, painted medians, trees, water, embankments, ravines, etc.) or may be protected (e.g., concrete, metal, or other types of longitudinal barriers). Painted flush areas must be 1.2 m in width to constitute a median strip.		
4	Roadside	4	4
	Used when this vehicle's location just prior to the critical precrash event is in the area between the outside edge of the shoulder and the right-of- way boundary. If there is no shoulder, the roadside area is defined as that area between the outside edge of the roadway and the right-of-way boundary.		
5	Outside right-of-way	5	5
	Used when this vehicle's location just prior to the critical precrash event is outside/beyond the right-of-way boundary.		
6	Off roadway - location unknowr	6	6
	Used when there is insufficient information to accurately locate this vehicle's position off the roadway just prior to the critical precrash event. There is sufficient information, however, to determine that this vehicle was off the roadway at the time of interest.		
7	In parking lane	7	7
	Used when this vehicle's location just prior to the critical precrash event is in a parking lane located outboard of the travel lanes. The parking lane may be an officially designated lane delineated by appropriate markings or may be established by customary usage without specific delineation.		
8	Gore	8	8

Form Screen Name: **Relation to roadway**   144

  Oracle Variable: PRECRASHVEHICLE.RELATION_ROADWAY   1344

		Oracle Value	SAS Value

  Element Attributes:
        Used when this vehicle's location just prior to the critical precrash event is in
        the area separating the travel lanes from an exit/entrance ramp/roadway. The
        gore area must be tapered and begins/end where the ramp/roadway
        separates from/joins the travel lanes.

  9999 Unknown   -9999   9999
        Used when there is insufficient information to determine this vehicle's location
        just prior to the critical precrash event.

  Sources:
        SCENE INSPECTION

Form Screen Name: **Restrictions to trafficway flow**

Oracle Variable: TRAFFICWAYRESTRICT.TRAFFICWAY_RESTRICT   1348

Screen Name: Restrictions to trafficway flow

Form # - Name: 78 -

SAS Data Set:

SAS Variable:

Remarks:

This variable identifies pre-existing trafficway flow restrictions. These restrictions should be identified whenever present. Selection of specific elements does not imply that the restriction contributed to crash causation.

Range:

Method: Fill all that apply

Element Attributes:	**Oracle Value**	**SAS Value**
1 No restrictions Used when trafficway flow in this vehicle's travel direction is not restricted/slowed due to a pre-existing condition.	1	1
2 Work zone Used when trafficway flow in this vehicle's travel direction is either slowed and/or diverted as a result of proceeding through a work zone. This element may also be used where a work zone established in opposing travel lanes either physically restricts trafficway flow in this vehicle's travel lanes or influences travel speed in this vehicle's travel lanes.	2	2
3 Roadway immersed Used when trafficway flow in this vehicle's travel directions either slowed and/or diverted as a result of water accumulation in the travel lane. This element may also be used where water accumulation in adjoining/opposing lanes restricts trafficway flow in this vehicle's travel lane.	3	3
4 Prior crash Used when trafficway flow in this vehicle's travel direction is either slowed and/or diverted as a result of a preceding crash. The preceding crash site may be located in this vehicle's travel lanes, in opposing travel lanes, in a median, or off the roadway.	4	4
5 Congestion Used when trafficway flow in this vehicle's travel direction is slowed due to high volume traffic conditions (e.g., rush hour conditions).	5	5
6 Fog Used when condensed water vapor, in cloud-like masses, is close to the ground limiting visibility at the time of the crash scene. This limiting of visibility must be sufficient to slow the traffic flow significantly. If the traffic has not slowed, this attribute should not be used.	6	6
7 Heavy snow Used when the precipitation falling at the time of the crash is predominately in the form of translucent ice crystals originating in the upper atmosphere as frozen particles of water vapor. The snow must be heavy enough to limit visibility or restrict travel on the roadway (i.e. significant accumulation). This limiting of visibility or degrading of roadway quality must be sufficient to slow the traffic flow significantly. If the traffic has not slowed, this attribute should not be used.	7	7
8 Heavy rain	8	8

Form Screen Name: **Restrictions to trafficway flow**   146

Oracle Variable: TRAFFICWAYRESTRICT.TRAFFICWAY_RESTRICT   1348

		Oracle Value	SAS Value
Element Attributes:	Used when the precipitation falling at the time of the crash is predominately in the form of water droplets and is heavy enough to restrict visibility or cause roadway immersion. If the traffic has not slowed, this attribute should not be used.		
9	Dust storm Used when trafficway flow in this vehicle's travel direction is slowed due to reduced visibility associated with a dust storm.	9	9
9998	Other (Specify) : Used when trafficway flow in this vehicle's travel direction is restricted for reasons other than noted in the other attributes.	-9998	9998
9999	Unknown Used when there is insufficient information to determine if trafficway flow restrictions existed at the time of the crash.	-9999	9999

Sources:

SCENE INSPECTION

Form Screen Name: **Roadway design deficiencies**

Oracle Variable: ROADWAY.ROADWAY_DEF   1359

Screen Name: Roadway design deficiencies

Form # - Name: 79 -

SAS Data Set:

SAS Variable:

Remarks:

CODE THE ATTRIBUTES FOR THIS VARIABLE BASED ON CALCULATIONS USING FIELD DATA

Information related to crown rates, superelevation rates, and curve radius provided in the material that follows has been derived from the AASHTO manual. It should be noted that the material provided is considered to be part of a general guideline and a number of exceptions are permitted.

CROWN

Recommended cross slope rates (crown) vary by surface types. AASHTO considers surfaceswhich retain their shape (e.g., Portland cement, concrete, bituminous asphalt) to be high surface types. Low surface types (e.g., earth, gravel, crushed stone) are considered to be deformable. Table 4-4 shows the range of values applicable to each type of surface.

Table 4-4
Normal Traveled-Way Cross Slope (Crown Rate)

Surface Type	Range In Cross Slope Rates (%)
High	1.5 - 2
Low	2 - 6

In general, higher cross slope rates are recommended for low surface types to prevent the absorption of water into the surface. These higher slope rates, in effect, are allowed to satisfy drainage issues.
In areas receiving intense rainfall, somewhat steeper cross slope rates may be needed to facilitate drainage from high surface types traveled-ways. In such cases, the slope on high type pavements may be increased to 2.5 percent…….
Where three or more lanes are provided in each direction, the maximum cross slope should be limited to 4 percent (assuming that the traveled-way is in an area receiving intense rainfall).

SUPERELEVATION RATES AND CURVE RADIUS

Superelevation rates (in curves) that are applicable over the range of curvature for each design speedare shown in Table 3-14. The most appropriate sequence to utilize table information is to first establish the relevant speed limit of the curve at the crash site. Next, determine the superelevation of the curve (e.g., 4, 6, 8, 10, or 12 percent) and then determine if the curve radius (as measured at the curve apex) meets or exceeds the minimum radius for that design speed as recommended by AASHTO. The formula used to determine curve radius is as follows:

$$R = C**2/8m + m/2$$

where   R = Radius
          C = Chord (typically 100 ft.)
          M = Middle ordinate

INSERT FORMULA FOR RADIUS OF CURVATURE. CANNOT PUT SUPERSCRIPTS IN.
INSERT
Minimum Radius For Design Of Rural Highways, Urban Freeways,
And High-Speed Urban Streets TABLE
FROM AASHTO

Range:

Method: Fill a single item

Form Screen Name: Roadway design deficiencies

Oracle Variable: ROADWAY.ROADWAY_DEF   1359

	Element Attributes:	**Oracle Value**	**SAS Value**
1	No deficiencies noted	1	1
2	Inappropriate signage speeds	2	2
	Warning or regulatory signs are inappropriate for roadway condition or design.		
3	Insufficient crown	3	3
	Roadway has insufficient crown for proper drainage. Water pools in travel lanes or wheel tracks.		
4	Excessive crown	4	4
	Refer to AASHTO Manual for quantitative definitions.		
5	Insufficient super-elevation	5	5
6	Excessive super-elevation	6	6
7	Excessive curvature	7	7
8	No shoulder/ Breakdown lane	8	8
9998	Other (specify) :	-9998	9998
9999	Unknown	-9999	9999

Sources:

SCENE INSPECTION

Form Screen Name: Trafficway flow

Oracle Variable: ROADWAY.TRAFFICWAY_FLOW   1347

Screen Name: Trafficway flow

Form # - Name: 80 -

SAS Data Set:

SAS Variable:

Remarks:

    If the collision occurred other than in a junction, select the attribute on the basis of the most representative description of the characteristics of the vehicle's roadway environment just prior to the critical precrash event. If this is off the roadway, select the attribute on the basis of the most representative description of the roadway leading to the point of departure.

    If the characteristic of the vehicle's roadway environment just prior to the critical precrash event is represented by the junction of two or more roadways, choose the trafficway flow on the basis of the most representative description of the approach leg to the junction for this vehicle.

    A roadway is that part of a trafficway where vehicles travel. A divided trafficway is composed of two or more roadways. A trafficway which has a median that is designed as a two-way left turn lane is considered to be one roadway for lane identification purposes.

    The Researcher selects the descriptor that best represents the vehicle's environment just prior to the critical precrash event. If the flow is designed to separate traffic, then choose accordingly.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Not physically divided (two way traffic) Use whenever there is no median or significant division of the opposing travel lanes. Generally, medians are not designed to legally carry traffic. NOTE: Although gores separate roadways, and traffic islands associated with channels, separate travel lanes, neither is considered a trafficway division.	1	1
2 Divided trafficway-median strip without positive barrier Use whenever the trafficway is physically divided but not by a manufactured positive barrier. The division is unprotected. Vegetation, gravel, paved medians, trees, water, embankments and ravines that separate a trafficway are examples of this code. NOTE: Raised curbed medians DO NOT constitute a positive barrier by themselves. The unprotected medians can be of any width, with the exception of painted paved flush areas which must be at least 1.2 meters in width to be coded as a median.	2	2
3 Divided trafficway-median strip with positive barrier Used whenever the trafficway is physically divided. The division is protected by a concrete, metal, or other type of longitudinal barrier (i.e., all manufactured barriers). Also bridges or underpass support structures and bridge rails should be coded with this attribute.	3	3
4 One way traffic	4	4

Form Screen Name: Trafficway flow   150

  Oracle Variable: ROADWAY.TRAFFICWAY_FLOW   1347

	Oracle Value	SAS Value

Element Attributes:
Used whenever the trafficway is undivided and traffic flows in one direction (e.g., oneway streets). However, this attribute can also be selected where a median is present so long as all the traffic on the trafficway goes in the same direction. An example occurs where the opposing roadway of the same named trafficway had to be split by such a distance that the right-of-way divides to accommodate other property. If (rare) one of the trafficways is further divided into multiple roadways by a median, then in this instance One way trafficway should be selected. Included in this attribute are entrance and exit ramps.

		Oracle Value	SAS Value
5	Not physically divided with two-way left turn lane	5	5

Used whenever the trafficway is physically divided by a two-way left turn lane which is designed to allow left turns to driveways, shopping centers, businesses, etc., while at the same time providing a separation of opposing straight-through travel lanes.

		Oracle Value	SAS Value
9999	Unknown	-9999	9999

Used when the trafficway flow cannot determined (e.g., ongoing construction and movable traffic barriers have been moved or removed since the crash date).

  Sources:

            SCENE INSPECTION

Form Screen Name: Number of travel lanes   151

Oracle Variable: ROADWAY.NUM_OF_TRAVEL_LANES   1349

Screen Name: Number of travel lanes

Form # - Name: 81 -

SAS Data Set:

SAS Variable:

Remarks:

The attribute is determined from the same roadway that was used to determine the Trafficway Flow. If traffic flows in both directions and is undivided, select the number of lanes in both directions. If the trafficway is divided into two or more roadways, select only the number of lanes for the roadway on which the vehicle under consideration was traveling.

If turn bays, acceleration, deceleration, or center 2-way left turn lanes exist and are physically located within the cross section of the roadway, and these lanes are the most representative of the driver's environment just prior to the critical precrash event, then they are to be included in the number of lanes.

Channelized lanes are separated from other through or turn related lanes. (NOTE: The separation normally will not involve a physical barrier.) Because a channelized lane is separated, it should not be included unless it is preceded by a turn bay or turn lane and this bay or lane is felt to be most representative of the driver's environment just prior to impact.

The number of lanes counted does not include any of which are rendered unusable by restriction of the right-of-way (e.g., closed due to construction). Show lanes on the scaled diagrams and annotate why a lane is closed.

Only those lanes ordinarily used for motor vehicle travel should be considered when completing this variable (i.e., pedestrian/bicycle lanes are excluded).

In a number of instances, there will be uncertainty as to the number of lanes due to: (1) nonstandard roadway widths; (2) variability of width in the same roadway due to disrepair and other reasons; or (3) absence of lane, center, and edge lines, etc. The number selected in these cases should represent the number of operational lanes based on customary or observed usage.

On a road that has legal parking such that the legal parking area ends short of the junction of the roadway with another roadway or drive; and the space left between the end of the legal parking area and the beginning of the junction can be utilized for turning by a vehicle on the roadway, do not consider this additional area as another travel lane (regardless of customary or observed usage in this instance).

This area should be construed as additional width to the existing travel lane(s). The only time that another lane will be counted at a junction is when that space is expressly designated for turning, e.g., by lane (line or turn arrow) marking, signs or signals.

The number of lanes for driveways, wide-mouth parking lots, etc. should be selected as follows:
 If it is possible to determine the number of lanes through either lane markings or observed or customary use, select the actual number of lanes present.
 If the number of lanes cannot be accurately established, select Unknown.

If the vehicle was on or in a driveway [see Relation to Junction, definitions for Driveway, alley access related, or in a crossover (primarily designed as an opening in a median used for "U" turns)] which is in essence a private way, select the number of lanes for that vehicle.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 One	1	1
Use when there is one travel lane.		
2 Two	2	2
Use when there are two travel lanes.		
3 Three	3	3
Use when there are three travel lanes.		
4 Four	4	4

Form Screen Name: Number of travel lanes   152

  Oracle Variable: ROADWAY.NUM_OF_TRAVEL_LANES   1349

		Oracle Value	SAS Value
Element Attributes:			
	Use when there are four travel lanes.		
5	Five	5	5
	Use when there are five travel lanes.		
6	Six	6	6
	Use when there are six travel lanes.		
7	Seven or more	7	7
	Use when there are seven or more travel lanes.		
9999	Unknown	-9999	9999
	Used when it is unable to be determined how many travel lanes were present when the crash occurred.		

  Sources:

        SCENE INSPECTION

Form Screen Name: **Rumble strip present**

Oracle Variable: ROADWAY.RUMBLE_STRIP   1358

Screen Name: Rumble strip present

Form # - Name: 82 -

SAS Data Set:

SAS Variable:

Remarks:

Rumble strips are pavement irregularities installed to warn drivers of lane or roadway departures. Other uses are to warn drivers on approach to toll plazas, T-type intersections or construction zones. They are generally installed on high-speed trafficways such as limited access highways.   Please be careful not to confuse Bott Dots (the raised white travel lane dots) with rumble strips. These are generally used as lane or roadway edge markers. Occasionally this type of marker will be used in gore areas.

Predominantly, rumble strips are used on the shoulders of roadways. The most common use is on the shoulders of the Interstate Highway system and high speed divided trafficways. Less common is use on shoulders of rural roads that have had a high frequency of run off road crashes.

Occasionally they have uses within the roadway:
1) Used under the center double yellow lane line to warn drivers of lane drift. Usually this situation occurs in a curve or approach to a curve
2) To warn driver when approaching tool booths.
3) To warn driver of dangerous intersections (usually approach to T intersections or on high speed trafficways).
4) On approaches to construction zones.
5) Within the travel lanes on a multi lane road to warn of lane drift.

Use in the traffic way usually involves a traffic study because of the noise factor they create. They would not likely be used in a residential area because of this. States have individual policies on when rumble strips are used, so the researchers might want to research their individual state policies regarding rumble strips.

Some States actually paint the rumble strips as an added visual safety feature in addition to the noise they create. Painted stripes on rumble strips are known as Rumble Stripes.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No rumble strip present	1	1
used when there is no rumble strip present in this vehicle's travel direction. Rumple strips for the opposite direction of travel are not considered for this variable.		
2 Right roadside rumble strip present	2	2
Used when there is a rumble strip on the shoulder adjacent to the right side of the road.		
3 Left roadside rumble strip present	3	3
Used when there is a rumble strip (depressed or raised) present on the shoulder adjacent to the left side of the travel lane. Only relevant for travel in that direction, not for opposing traffic.		
4 Both roadsides rumble strip present	4	4
Used when a rumble strip (depressed or raised) is present on the should adjacent to both travel lanes.		
8 Other (specify) :	8	8

Form Screen Name: **Rumble strip present**

  Oracle Variable: ROADWAY.RUMBLE_STRIP   1358

	Oracle Value	SAS Value
Element Attributes: Used primarily where there is a rumble strip for the opposite direction of travel lane(s). This vehicle crosses the roadway and partially or completely exits the opposite travel direction lanes. Specify the type of rumble strip (e.g., raised/depressed), the degree of roadway departure (e.g., partial or full), and if this vehicle engaged/crossed the rumble strip.		
9999 Unknown	-9999	9999

  Sources:

SCENE INSPECTION

Form Screen Name: **Type of road surface**   155

Oracle Variable: ROADWAY.SURFACE_TYPE   1356

Screen Name: Type of road surface

Form # - Name: 83 -

SAS Data Set:

SAS Variable:

Remarks:

    This element attribute is determined from the same roadway which was used to determine the Trafficway Flow. If the lateral cross section contains lanes of more than one surface type, select the surface type of the lane the driver's vehicle was traveling on just prior to this vehicle's critical precrash event.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Concrete Used when the road surface is made of a material consisting of a conglomerate of gravel, pebbles, broken stone or slag, in a mortar or cement matrix.	1	1
2 Bituminous (asphalt) Used when the road surface is made of a product obtained by the distillation of coal and petroleum. Also referred to in non-technical terms as "blacktop".	2	2
3 Brick or block Used when the road surface is constructed of paving stone (e.g. cobblestone, paving bricks, etc.).	3	3
4 Slag, gravel, or stone Used when the road surface is constructed of a loose material primarily consisting of the elements of slag, gravel or stone.	4	4
5 Dirt Used when the improved road surface is made of a natural earthen surface.	5	5
9998 Other (Specify) : Selected when a material such as wood or metal is used for the road surface.	-9998	9998
9999 Unknown Used when the surface type is unknown.	-9999	9999

Sources:

        SCENE INSPECTION

Form Screen Name: **Condition of road surface**

Oracle Variable: ROADWAY.SURFACE_CONDITION   1089

Screen Name: Condition of road surface

Form # - Name: 84 -

SAS Data Set:

SAS Variable:

Remarks:
> This element attribute is based on the location which best represents the Pre-Crash Environment data. The element should be selected based on the same lanes used to select Trafficway Flow.
> It is possible for different surface conditions to exist on the same roadway (e.g., intermittent wet and dry sections). The researcher should consider the condition most representative of the roadway immediately prior to this vehicle's critical precrash event.

Range:

Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	Dry	1	1
	Used when road surface is dry and clear of surface contaminants		
2	Wet	2	2
	Used when roadway is wet, no water standing		
3	Standing water (1/4 inch or deeper)	3	3
	Use this attribute when there is standing water (puddles or the roadway is completely covered) at least 1/4 inch deep on the roadway.		
4	Snow covered	4	4
	Used when roadway is partial or wholly covered in snow--packed or loose		
5	Slush	5	5
	Used when roadway is partially or wholly covered with melting snow/ice/slushy conditions		
6	Ice	6	6
	Used when roadway is partially or wholly covered with sheet ice (packed)		
7	Sand, dirt	7	7
	Selected when this attribute is present on another road surface. (i.e. a dirt road would not receive this attribute solely due to presence). If the sand, or dirt occurs in combination with moisture conditions Wet, Snow or Slush, or Ice, then select the moisture condition.		
8	Other (specify) :	8	8
	Used when roadway is covered with liquid surface contaminant such as oil, diesel fuel, etc.		
9999	Unknown	-9999	9999

Sources:

SCENE INSPECTION

Form Screen Name: **Roadway horizontal alignment**   157

Oracle Variable: ROADWAY.ROADWAY_ALIGN   1354

Screen Name: Roadway horizontal alignment

Form # - Name: 85 -

SAS Data Set:

SAS Variable:

Remarks:
This element is determined from the same roadway which was used to determine Trafficway Flow. Select the descriptor that best represents the vehicle's environment just prior to this vehicle's critical pre-crash event.
Any perceptually determined curvature of a roadway constitutes a curve.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Straight Refers to a roadway which has no perceptually determined curvature.	1	1
2 Curve right Refer to a perceptually determined curvature of a roadway. The vehicle's direction of travel determines whether the curvature is right or left.	2	2
3 Curve left Refer to a perceptually determined curvature of a roadway. The vehicle's direction of travel determines whether the curvature is right or left.	3	3
9999 Unknown Used when it is unable to be determined what the alignment of the roadway is.	-9999	9999

Sources:
SCENE INSPECTION

Form Screen Name: **Length of chord for radius of curvature**   158

Oracle Variable: ROADWAY.CHORD_LENGTH   5957

Screen Name: Length of chord for radius of curvature

Form # - Name: 86 -

SAS Data Set:

SAS Variable:

Remarks:

Length of the chord used to calculate radius of curvature.   Radius of Curvature is measured at the apex of the curve.

Stretch a 30 meter chord along the roadway so that it touches the curved roadway edge line as illustrated by point A and point C.

Range:

Method: Enter measured value / units ___ ___

	Oracle Value	SAS Value
Element Attributes:		
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

Form Screen Name: **Middle ordinate of curve chord measurement**   159

Oracle Variable: ROADWAY.MIDORD_LENGTH   5953

Screen Name: Middle ordinate of curve chord measurement

Form # - Name: 87 -

SAS Data Set:

SAS Variable:

Remarks:

   Length in centimeters of the middle ordinate measured for the curve chord
   Radius of Curvature is measured at the apex of the curve.

   Stretch a 30 meter chord along the roadway so that it touches the curved roadway edge line as illustrated by point A and
   point C.

   Measure the distance between the chord and the roadway edge line at the middle ordinate (point B). The middle ordinate
   is located at the midpoint (or 15 meter mark).

   The radius will be computed by the system using the following formula:
   $R = C2/8M + M/2$
   C = chord
   M = middle ordinate

Range:

Method: Enter measured value / units ___ ___

	Oracle Value	SAS Value
Element Attributes:		
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

Form Screen Name: Radius of curvature

Oracle Variable: ROADWAY.RADIUS_CURVATURE   3539

Screen Name: Radius of curvature

Form # - Name: 88 -

SAS Data Set:

SAS Variable:

Remarks:

Radius of Curvature is measured at the apex of the curve.

Stretch a 30 meter chord along the roadway so that it touches the curved roadway edge line as illustrated by point A and point C.

Measure the distance between the chord and the roadway edge line at the middle ordinate (point B). The middle ordinate is located at the midpoint (or 15 meter mark).

Compute the radius using the following formula:
R = C2/8M + M/2
C = chord
M = middle ordinate

Range:

Method: System calculated value

Sources:

Form Screen Name: **Length of level for superelevation measurement**   161

Oracle Variable: ROADWAY.SUPRELEV_HORIZ_MEAS   5945

Screen Name: Length of level for superelevation measurement

Form # - Name: 89 -

SAS Data Set:

SAS Variable:

Remarks:
    Length (in centimeters) of the level used to measure the superelevation.

Range:

Method: Enter measured value / units ___ ___

	Oracle Value	SAS Value
Element Attributes:		
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

Form Screen Name: **Vertical measurement for superelevation**   162

Oracle Variable: ROADWAY.SUPRELEV_VERT_MEAS   5951

Screen Name: Vertical measurement for superelevation

Form # - Name: 90 -

SAS Data Set:

SAS Variable:

Remarks:

   Vertical measurement in centimeters of the superelevation (+,-) relative to the vehicle direction of travel.

Range:

Method: Enter measured value / units ___ ___

	Oracle Value	SAS Value
Element Attributes:		
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

Form Screen Name: **Superelevation**

Oracle Variable: ROADWAY.SUPERELEVATION   3538

Screen Name: Superelevation

Form # - Name: 91 -

SAS Data Set:

SAS Variable:

Remarks:
    System calculated value using the following formula and variables
    Level length (cm)/change in height (cm)

Range:

 Method: System calculated value

 Sources:

Form Screen Name: Roadway vertical profile   164

Oracle Variable: ROADWAY.ROADWAY_VERT_PROFILE   1355

Screen Name: Roadway vertical profile

Form # - Name: 92 -

SAS Data Set:

SAS Variable:

Remarks:
    The element attribute is determined from the same roadway which was used to determine Trafficway Flow. Measure the area most representative of the pre-crash environment. To determine the grade, the vertical measurement is divided by the horizontal value; the result is a percentage value of the grade.

Range:

Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	Level Selected when the roadway surface tangent gradient is less than or equal to 2%. [i.e. vertical divided by horizontal (vertical / horizontal)]	1	1
2	Uphill grade (>2%) Selected when the roadway profile is uphill or positive, relative to the direction of travel of this vehicle.	2	2
3	Hill crest Select when the roadway surface is in vertical transition between two points of tangency at the top of a hill.	3	3
4	Downhill grade (>2%) used when the roadway profile is downhill or negative, relative to the direction of travel for this vehicle.	4	4
5	Sag Select when the roadway surface is in vertical transition between two points of tangency at the bottom of a slope.	5	5
9999	Unknown Used when the researcher cannot determine the vertical profile of a road. This should never occur in NMVCCS.	-9999	9999

Sources:
        SCENE INSPECTION

Form Screen Name: **Access control**   165

   Oracle Variable: ROADWAY.ACCESS_CONTROL   1350

   Screen Name: Access control

   Form # - Name: 93 -

 SAS Data Set:

 SAS Variable:

 Remarks:

   This attribute is determined for the same roadway described in the Number of Travel Lanes variable (GV24). The intent here is to describe the level of control maintained for vehicles attempting to enter/exit the roadway.

 Range:

 Method: Fill a single item

	Element Attributes:	Oracle Value	SAS Value
1	Full control Used to describe the circumstance where vehicles are only permitted to enter/exit this roadway at designated interchange areas (i.e., no at grade intersections or commercial/private driveway access).	1	1
2	No control Used to describe the circumstance where vehicle's are permitted to enter/exit the roadway from at grade intersections, driveways, alley accesses, and other similar entrances/exists.	2	2
3	Other (Specify) : Used to describe circumstances where partial control of entering/existing vehicles is maintained (e.g., at grade intersections, but no commercial/private driveway access).	3	3
9999	Unknown Used when there is insufficient information to establish the level of vehicle control maintained on this roadway.	-9999	9999

 Sources:

    SCENE INSPECTION

Form Screen Name: Traffic control device   166

Oracle Variable: TRAFFICCONTROLDEVICE.TRAFFIC_CONTROL_DEVICE   399

Screen Name: Traffic control device

Form # - Name: 94 - Were there any traffic signs or signals at the crash scene? If so, which was most relevant to your
                            vehicle's position?

SAS Data Set:

SAS Variable:

Remarks:

This variable is determined from the same roadway used to define the Trafficway flow and Travel lane. The Researcher should code the traffic sign or signal that the interviewee indicates best controlled traffic in the vehicle's environment just prior to this vehicle's critical precrash event. This variable measures the above-ground traffic control(s) which regulate vehicular traffic. Excluded are any controls which solely regulate pedestrians (e.g., wait/walk signals).

Focus on the road segment just prior to the location of the critical pre-crash event and select the traffic control device which is present. In-junction crashes should be based on the presence of a traffic control device for the roadway that the vehicle is traveling.

Please note the following information for assistance in coding the correct attributes:
Regulatory signs Give notice of traffic laws or regulations.
Warning signs Call attention to conditions on, or adjacent to, a highway or street that are potentially hazardous to traffic operations.
Guide signs Show route designations, destinations, directions, distances, services, points of interest, and other geographical recreational or cultural information.

Signs come in standard shapes.
The octagon is exclusively used for the STOP sign.
The equilateral triangle, with one point downward, is used exclusively for the YIELD sign.
The round shape is used for the advance warning of a railroad crossing and for the civil defense evacuation route marker.
The pennant shape, an isosceles triangle, with its longest axis horizontal, is used to warn of no passing zones.
The diamond shape is used only to warn of existing or possible hazards either on or adjacent to the roadway or adjacent thereto.
The (vertical) rectangle, ordinarily with the longer dimension vertical, is used for regulatory signs, with the exception of STOP signs and YIELD signs.
The (horizontal) rectangle, ordinarily with the longer dimension horizontal is used for route markers and recreational area guide signs.
The pentagon, point up, is used for School Advance and School Crossing signs.
Other shapes are reserved for special purposes; for example, the shield or other characteristic design for route markers and crossbuck for railroad crossings.

Signs can be distinguished by their color. The following general rules apply:
Red is used as a background color on prohibitory type regulatory signs (e.g., STOP, Do Not Enter, Wrong Way). It is also used as the circular outline and diagonal bar prohibitory symbol.
BLACK may be used as a background (e.g., ONE WAY); it is used as a message on white, yellow and orange signs.
WHITE is used as the background for route markers, guide signs, and regulatory signs (except STOP). It is used as the legend for brown, green, blue, black and red signs.
Orange is used only as a background color for construction and maintenance signs.
Yellow is used as a background color for warning signs and for school signs.
Brown, green, and blue are used as a background color for guide signs.

Range:

Method: Fill a single item

Form Screen Name: Traffic control device   167

   Oracle Variable: TRAFFICCONTROLDEVICE.TRAFFIC_CONTROL_DEVICE   399

		Oracle Value	SAS Value
	Element Attributes:		
1	No control devices	1	1
	Used when there is no above ground sign or signal to regulate traffic flow. If a traffic control device has been deactivated (e.g. traffic signal that emits no signal) during certain times of the day, and was deactivated at the time of the crash select No used for regulatory signs,		
2	Control signal (on colors) w/ pedestrian signa	2	2
	Used when the traffic control device is a colored control signal with pedestrian signal.		
3	Control signal (on colors) w/o pedestrian signal	3	3
	Used when the traffic control device is a colored control signal without a pedestrian signal		
4	Control signal (on colors) unknown pedestrian signal	4	4
	Used when the traffic control device is a colored control signal and it is unknown if there was a pedestrian signal		
5	Flashing control signal	5	5
6	Flashing beacon	6	6
7	Flashing highway signal, unknown or other	7	7
8	Lane use control signal	8	8
9	Other highway signal (specify) :	9	9
	Used when the traffic control device is not one listed above		
10	Highway signal, type unknown	10	10
	Used when a regulatory sign was present at the time of collision but was removed or not available during the scene inspection to determine its type and the PAR is not specific about a traffic control presence.		

Regulatory Signs

11	Stop sign	11	11
	Used when a roadway is controlled by an octagor-shaped sign, with white letters and border on a red background.		
12	Yield sign	12	12
	Used when a roadway is controlled by an equilatera-shaped triangle, with one point downward, having a red border band and white interior and the word "YIELD" in red inside the border band.		
13	Other regulatory sign (specify) :	13	13
	Used when a regulatory sign other than a "stop" or "yield" sign is present. "Other" signs include speed limit signs, movement signs (e.g., NO TURN, LEFT TURN ONLY, DO NOT ENTER, WRONG WAY, ONE WAY,), parking signs (e.g., NO PARKING, EMERGENCY PARKING ONLY), and other miscellaneous signs (e.g., ROAD CLOSED TO THROUGH TRAFFIC, WEIGHT LIMIT, etc.)		
14	Unknown type of regulatory sign	14	14
	Used when a regulatory sign was present at the time of collision but was removed or not available during the scene inspection. If the researcher is unable to determine its type and the PAR is not specific about a traffic control presence, use this attribute.		

School zone signs

15	School zone speed limit	15	15

Form Screen Name: Traffic control device

 Oracle Variable: TRAFFICCONTROLDEVICE.TRAFFIC_CONTROL_DEVICE   399

		Oracle Value	SAS Value
Element Attributes: Used when the TCD is a school zone speed limit, and the school zone is active at the time of the crash.			
16	School advance or crossing sign	16	16
	Used when a school zone warning sign is present and in effect (if time limited). Most school zones are in effect during the times of student movement to/from the school on school days. As a general rule, these signs are not in effect on holidays, vacation days, weekends, etc. Select this attribute only if the crash occurred during the times/days the sign was in effect. Presence of children is not relevant to sign control. These signs may include a 5-sided sign with the point at the top, a rectangular, school speed zone sign, or some other black printing on a yellow background sign.		
17	Other school related sign (specify) :	17	17
	Used when the school related sign is not a school zone sign, or a school zone speed limit sign.		

Warning signs

18	Warning sign	18	18
	Used when a sign is present, warning of an existing or potentially hazardous condition on or adjacent to a highway or street. Generally warning signs are diamond-shaped with black legend and a border on a yellow background. Examples include TURN SIGNS, CURVE SIGNS, WINDING ROAD SIGN, STOP AHEAD SIGN, "T" SYMBOL SIGNS, etc. Some warning signs are horizontal rectangles, for example, a large arrow sign intended to give notice of a sharp change in alignment in the direction of travel.		

Misc not at RR crossing

19	Officer, crossing guard, flagman, etc	19	19
	An officially designated person controlling traffic takes precedence over any other attribute.		

RR Grade crossing - active

20	Gates (active)	20	20
	Used when railroad crossing controls are active gates.		
21	Flashing lights (active)	21	21
	Used when railroad crossing controls are flashing lights		
22	Traffic control signal (active)	22	22
	Railroad crossing controls are present and the TCD is an on-colors traffic signal for the railroad crossing.		
23	Wigwags (active)	23	23
	The wigwag is a circular white sign with a black cross and black edges. It has a red light in the center. The sign is mounted on a pendulum structure, either hanging from a post or set in a pedestal close to the crossing. When the train is approaching or crossing the trafficway, the pendulum swings back and forth and the red light flashes.

Note for manual assembly: Attach images of wigwags, suspended and pedestal mounted | | |
24	Bells (active)	24	24
	Used when railroad crossing controls are present and are active ringing bells		
25	Other train activated device (specify) :	25	25

Form Screen Name: **Traffic control device**

Oracle Variable: TRAFFICCONTROLDEVICE.TRAFFIC_CONTROL_DEVICE   399

		Oracle Value	SAS Value
Element Attributes:			
	Used when the Active Railroad crossing device is not listed above.		
26	Active device, type unknowr	26	26
RR Grade crossing -			
27	Cross-bucks (passive)	27	27
	Railroad crossing controls are present and is a cross-buck sign circle with a black "X" on a yellow background.		
28	Stop sign (passive)	28	28
29	Special warning device (passive)	29	29
30	Other passive railroad crossing device (specify):	30	30
31	Passive device, type unknowr	31	31
RR Grade crossing - misc			
32	Grade crossing controlled, type unknowr	32	32
Other control device			
33	Other (specify) :	33	33
8888	No driver present	-8888	8888
9997	Not applicable	-9997	9997
9999	Unknowr	-9999	9999
	Used when it is unknown if there was a traffic control device present		

Sources:

SCENE INSPECTION

Form Screen Name: **Functioning of traffic control device**   170

Oracle Variable: ROADWAY.TRAFFIC_DEVICE_FCTN   1371

Screen Name: Functioning of traffic control device

Form # - Name: 95 - (If applicable) Was the traffic sign/signal functioning properly?

SAS Data Set:

SAS Variable:

Remarks:
        Function level of the selected traffic device.

Range:

Method: Fill a single item

	Element Attributes:	Oracle Value	SAS Value
1	No traffic signs or signals Used when Traffic control device has No control devices selected	1	1

2	Traffic sign/signal not functioning (specify) :
	 Used in the following situations:
	 -The traffic control device was not operating.
	 -The traffic control device selected has some function, but the function was improper, inadequate, or operating erratically. (e.g., signal works but was stuck on red).
	 -The traffic control device was not visible due to:
	         Being defaced
	         Faded
	         Rotated so it could not be seen
	         Covered with snow,
	         Lying on ground, etc.
		2	2

3	Traffic sign/signal functioning properly Used when the traffic control device was functioning as designed at the time of the crash.	3	3
9997	Not applicable	-9997	9997
9999	Unknown Used when the status of the traffic control device, at the time of the crash, cannot be determined.	-9999	9999

Sources:
            SCENE INSPECTION

Form Screen Name: **Atmospheric condition**   171

Oracle Variable: ATMOSPHERIC_CONDITION.ATMOSPHERICCONDITION   172

Screen Name: Atmospheric condition

Form # - Name: 96 - What was the weather like at the time of the crash? Were there any adverse atmospheric conditions?

SAS Data Set:

SAS Variable:

Remarks:

> Code all atmospheric conditions present for this driver. Each driver may experience different conditiors in the crash. If applicable, wind velocity may be obtained from the National Weather Service internet site.

Range:

 Method: Fill all that apply

Element Attributes:	**Oracle Value**	**SAS Value**
1 Clear--No adverse conditions Used when no meteorological conditions present at time of the crash which affected visibility or road surface.	1	1
2 Cloudy Used when the sky is cloud covered, reducing the ambient light	2	2
3 Snow Used when the precipitation falling at the time of the crash is predominately in the form of translucent ice crystals originating in the upper atmosphere as frozen particles of water vapor. Accumulation is not necessary to select this attribute.	3	3
4 Fog, Smog, Smoke Used when condensed water vapor, in cloud-like masses, is close to the ground limiting visibility at the time of the crash scene. This attribute is also used for heavy smoke or smog presence. Heavy is defined as enough to limit visibility.	4	4
5 Rain Used when the precipitation falling at the time of the crash is predominately in the form of water droplets	5	5
6 Sleet, Hail (Freezing drizzle or rain) Used when the precipitation meets the definition of sleet or hail. Sleet forms in the winter as raindrops freeze on their descent toward the ground. Since the drops are not bounced up and down inside the cloud, sleet cannot grow in size like hail, and typically reaches the ground as small pellets of ice. Hail typically forms in violent thunderstorms when raindrops can accumulate many layers of ice while bouncing up and down within the storm. This can result in large hailstones. Hail forms from thunderstorms, while sleet forms from winter storms.	6	6
7 Blowing Snow Used when the precipitation falling at the time of the crash is predominately in the form of translucent ice crystals originating in the upper atmosphere as frozen particles of water vapor. There must be significant wind at the time to select this attribute. Accumulation is not necessary to select this attribute.	7	7
8 Severe crosswinds	8	8

Form Screen Name: **Atmospheric condition**   172

  Oracle Variable: ATMOSPHERIC_CONDITION.ATMOSPHERICCONDITION   172

		Oracle Value	SAS Value
Element Attributes: Used when a wind gust blowing at an angle to the path of the vehicle occurs prior to the crash. Straight on headwinds and tailwinds should not be used to select this attribute.			
9	Other (specify) : Used when there is a relevant weather related factor that is not described in preceding elements. Specify the nature of this factor.	9	9
8888	No driver present Used when there is no driver in the driver's position at the time of the crash.	-8888	8888
9999	Unknown Used when there is insufficient information to determine what weather conditions were present at the time of the crash.	-9999	9999

  Sources:

        OBSERVATION
        REVIEWER ASSESSMENT

Form Screen Name: EDR information obtained?   EDR data   173

Oracle Variable: EDR.EDRINFO   5332

Screen Name: EDR information obtained?

Form # - Name: 97 -

SAS Data Set:

SAS Variable:

Remarks:

Range:

Method: Select a single item

Element Attributes:	Oracle Value	SAS Value
1 Yes-Data entered The EDR was read and data uploaded to the computer. Quality and completeness of uploaded information varies with versions of the EDR and the reading software.	1	1
2 EDR information not obtained --Vehicle make/model not supported by software The researcher's computer is not equipped with correct software to read the EDR for this vehicle make or model	2	2
3 EDR information not obtained -Vehicle not equipped with EDR This vehicle, which may or may not have air bags, is not equipped with event data recorder software.	3	3
4 EDR information not obtained--Vehicle damage prevents downloading EDR The vehicle has been damaged so that; -The electrical system is compromised so that the researcher cannot read information from the on-board diagnostic plug AND -Vehicle damage makes access to necessary connections to retrieve information from the EDR impossible. PROVIDE PHOTO DOCUMENTATION OF THE LIMITING DAMAGE	4	4
5 EDR information not obtained--Permission refused to access/read EDR The researcher was refused permission to access and/or read the information from the EDR	5	5
6 EDR information not obtained-- Information unknown Use this attribute if it is unknown if this vehicle is equipped with an EDR or the EDR has been harvested at the direction of the zone center	6	6

Sources:

Form Screen Name: **Data type from EDR**

Oracle Variable: EDR.EDRTYPEID   5034

Screen Name: Data type from EDR

Form # - Name: 98 -

SAS Data Set:

SAS Variable:

Remarks:
   This variable stores the type of Delta V reading reported by EDR during the crash. Depending on the EDR, it may be
   capable of storing longitudinal or longitudinal and lateral delta v recordings.

Range:

Method: Select a single item

	Element Attributes:	**Oracle Value**	**SAS Value**
1	Longitudinal	1	1
	Longitudinal delta v results only		
2	Longitudinal and lateral delta v	2	2
	Longitudinal and lateral delta v results		
9997	Not applicable	-9997	9997
9999	Unknown	-9999	9999

Sources:

Form Screen Name: Crash event number linked to EDR event	**EDR data**	175

Oracle Variable: EDR.EVENTID   146

Screen Name: Crash event number linked to EDR event

Form # - Name: 99 -

SAS Data Set:

SAS Variable:

Remarks:

    The system identifier for each individual event.

    Element Attributes:
    Choose event number form drop down list
    Event not related to this crash
    Not reported
    Unknown

    Source: Researcher determined

    Choose event number form drop down list
    Choose from the list of events previously listed for this vehicle

    Event not related to crash
    If there is a near deployment or deployment event not related to this crash.

    Unknown
    If a determination cannot be made as to which event the EDR data relates.

    NOT REPORTED
    is used if there is no indication in the official case to which event, if any, the EDR data relates to.

Range:

 Method: Enter a value _____

Element Attributes:	**Oracle Value**	**SAS Value**
9997 Not applicable	-9997	9997
No EDR or no EDR recording for this vehicle		
9998 Event not related to this crash	-9998	9998
Sytem enabled and deployment or nondeployment events recorded but events not related to this crash.		
9999 Unknown	-9999	9999
Unknown event number in crash triggered EDR event recording		

 Sources:

EDR data   176

Form Screen Name: **Number of ignition cycle at event**

 Oracle Variable: EDR.EVENTIGNITIONCYCLES   160

 Screen Name: Number of ignition cycle at event

 Form # - Name: 100 -

 SAS Data Set:

 SAS Variable:

 Remarks:

   The variable records the number of ignition cycles at event occurrence. It Identifies how many times the ignition cycle ahs been cycled on and off.

   Element Attributes:
   Enter the number of cycles
   Not reported
   Unknown

   Source: EDR

   ENTER THE NUMBER OF CYCLES
   Used if the number of ignition cycles is known.

   NOT REPORTED
   Used if uploaded data did not record the number of ignition cycles.

   UNKNOWN
   Used if it is unknown uploaded data recorded the number of ignition cycles.

 Range:

 Method: Enter a value _____

Element Attributes:	**Oracle Value**	**SAS Value**
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

 Sources:

Form Screen Name: **Pre-event Events**

Oracle Variable: EDR_PRECRASH.PRESECONDS   5028

Screen Name: Pre-event Events

Form # - Name: 101 -

SAS Data Set:

SAS Variable:

Remarks:

    The time in seconds before the deployment/nondeployment event.

Range:

Method: Check or Enter Value in Box

Element Attributes:	Oracle Value	SAS Value
1 One second prior to system wakeup/enable	-1	1
2 Two seconds prior to system wakeup/enable	-2	2
3 Three seconds prior to system wakeup/enable	-3	3
4 Four seconds prior to system wakeup/enable	-4	4
5 Five seconds prior to system wakeup/enable	-5	5

Sources:

Form Screen Name: **Brake switch activation at system wakeup**

Oracle Variable: EDR.BRAKESWITCHID   5032

Screen Name: Brake switch activation at system wakeup

Form # - Name: 102 -

SAS Data Set:

SAS Variable:

Remarks:

There are five pre-crash speed readings at one second intervals. This variable notes if the brake light switch is on or off during precrash to event.
The brake switch circuit status. The options are on or off. Not reported and unknown are valid values.

ON
is used if the brake switch was engaged.

OFF
is used if the brake switch was not engaged.

NOT REPORTED
is used if the official records do not list the status of the brake switch.

UNKNOWN
is used if it is not known whether the official records show the status of the brake switch.

Range:

Method: Select a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 On Brake light switch on	1	1
2 Off Brake light switch off	2	2
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

Form Screen Name: **Speed (MPH)**

Oracle Variable: EDR_PRECRASH.SPEED   5029

Screen Name: Speed (MPH)

Form # - Name: 103 -

SAS Data Set:

SAS Variable:

Remarks:

    The speed, measured in MPH, recorded pre-event by the EDR.

Range:

Method: Enter a value _____

Element Attributes:	Oracle Value	SAS Value
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

Form Screen Name: **Throttle %**

Oracle Variable: EDR_PRECRASH.THROTTLE   5031

Screen Name: Throttle %

Form # - Name: 104 -

SAS Data Set:

SAS Variable:

Remarks:
    The measured percentage of the throttle opening at one second intervals from five seconds prior to system wakeup to deploy/nondeploy event.

Range:

Method: Enter a value _____

Element Attributes:	Oracle Value	SAS Value
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

Form Screen Name: **Engine speed (RPM)**

Oracle Variable: EDR_PRECRASH.RPM

5030

Screen Name: Engine speed (RPM)

Form # - Name: 105 -

SAS Data Set:

SAS Variable:

Remarks:

> The revolutions per minute of the engine at one second intervals from five seconds prior to system wakeup to deploy/nondeploy event.

Range:

Method: Enter a value _____

Element Attributes:	**Oracle Value**	**SAS Value**
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

Form Screen Name: Driver belt status

Oracle Variable: EDR.DRIVERBELTID   158

Screen Name: Driver belt status

Form # - Name: 106 -

SAS Data Set:

SAS Variable:

Remarks:

    The field records the driver's belt status -- whether a driver's restraint buckle was engaged in the latch.

Range:

Method: Select a single item

		Oracle Value	SAS Value
Element Attributes:			
1	Buckled	1	1
	Belt restraint indicated as buckled in EDR report.		
2	Not buckled	2	2
	Belt restraint indicated as not buckled in EDR report.		
8886	Not reported	-8886	8886
9997	Not applicable	-9997	9997
9999	Unknown	-9999	9999

Sources:

EDR data   183

Form Screen Name: **Passenger - belt status**

Oracle Variable: EDR.PASSBELTID   161

Screen Name: Passenger - belt status

Form # - Name: 107 -

SAS Data Set:

SAS Variable:

Remarks:
    This attribute records if the passenger's restraint buckle was engaged in the latch.

Range:

Method: Select a single item

Element Attributes:	Oracle Value	SAS Value
1 Buckled EDR file indicates passenger belt restraint was buckled at the time of system wakeup.	1	1
2 Unbuckled EDR file shows passenger belt not buckled at the time of system wakeup.	2	2
8886 Not reported EDR did not report this data	-8886	8886
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

EDR data   184

Form Screen Name: **Driver pretensioner deployment time**

Oracle Variable: EDR.PRETENSEDEPLOYTIME   147

Screen Name: Driver pretensioner deployment time

Form # - Name: 108 -

SAS Data Set:

SAS Variable:

Remarks:
   The time for driver pretensioner actuation.
   EDR records the time in milliseconds after algorithm enabled that the Pretensioner actuated.
   Pretensioners are designed to take up the slack in a seat belt during a crash of sufficient deceleration.

Range:

Method: Enter time in milliseconds _____ms

Element Attributes:	Oracle Value	SAS Value
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

Form Screen Name:	**Passenger pretensioner deployment time**	**EDR data**	185

Oracle Variable: EDR.PASPRETENSEDEPLOYTIME   148

Screen Name: Passenger pretensioner deployment time

Form # - Name: 109 -

SAS Data Set:

SAS Variable:

Remarks:

　　The time for passenger pretensioner actuation.
　　EDR records the time in milliseconds after algorithm enabled that the Pretensioner actuated.
　　Pretensioners are designed to take up the slack in a seat belt during a crash of sufficient deceleration.

Range:

　Method: Enter time in milliseconds _____ms

　Sources:

EDR data   186

Form Screen Name: **Passenger seat location**

Oracle Variable: EDR.PASSEATID   140

Screen Name: Passenger seat location

Form # - Name: 110 -

SAS Data Set:

SAS Variable:

Remarks:
      Select the seat location of the passenger.

Range:

 Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
12	Front seat center	12	12
13	Front seat right	13	13
9997	Not applicable	-9997	9997
9999	Unknown	-9999	9999

 Sources:

Form Screen Name: **Passenger suppression switch**

Oracle Variable: EDR.PSWITCHSTATUSID   159

Screen Name: Passenger suppression switch

Form # - Name: 111 -

SAS Data Set:

SAS Variable:

Remarks:

This field documents the presence of the passenger's air bag cut off switch and its position. Not reported or unknown are valid values but does not mean that the suppression switch was on or off if used.

Element Attributes:
On
Off
Not Reported
Unknown

Source: EDR

ON
is used if the passenger's air bag cutoff switch was in the "ON" position.

OFF
is used if the passenger's air bag cutoff switch was in the "Off: position.

NOT REPORTED
is used if the official records do not list the status of the passenger's air bag cutoff switch.

UNKNOWN
is used if is not known whether the official records list the status of the passenger's air bag cutoff switch.

Range:

Method: Select a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 On	1	1
Used if the passenger's air bag cutoff switch was in the "ON" position.		
2 Off	2	2
Used if the passenger's air bag cutoff switch was in the "Off: position.		
8886 Not reported	-8886	8886
9997 Not applicable	-9997	9997
Used if the official records do not list the status of the passenger's air bag cutoff switch.		
9999 Unknown	-9999	9999
Used if is not known whether the EDR file included the status of the passenger's air bag cutoff switch.		

Sources:

EDR data   188

Form Screen Name: **Number of ignition cycles at EDR download**

Oracle Variable: EDR.INVESTIGNITIONCYCLE   162

Screen Name: Number of ignition cycles at EDR download

Form # - Name: 112 -

SAS Data Set:

SAS Variable:

Remarks:
    Enter the number of ignition cycles at the investigation.

Range:

Method: Enter a value _____

Element Attributes:	Oracle Value	SAS Value
8886 Not reported	-8886	8886
Used if the EDR did not report the number of ignition cycles at upload		
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

EDR data   189

Form Screen Name: **CDCID**

   Oracle Variable: CDC.CDCID   152

   Screen Name: CDCID

   Form # - Name: 113 -

   SAS Data Set:

   SAS Variable:

   Remarks:

   The system identifier of CDC that describes the vehicle deformation caused by specific event.

   i.e. Event #4 12lzew2., that links the event to the damage.

Range:

   Method: Enter CDC ___ ___ ___ ___ ___ ___ ___

	Oracle Value	SAS Value
Element Attributes:		
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

   Sources:

EDR data   190

Form Screen Name: Time from deployment

Oracle Variable: EDR_DELTAV.SECONDS   5035

Screen Name: Time from deployment

Form # - Name: 114 -

SAS Data Set:

SAS Variable:

Remarks:
      The time in milliseconds after the system wakeup occurred.

Range:

Method: Enter a value _____

Element Attributes:	Oracle Value	SAS Value
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

Form Screen Name: **Delta V**

EDR data

Oracle Variable: EDR_DELTAV.DELTAV

5036

Screen Name: Delta V

Form # - Name: 115 -

SAS Data Set:

SAS Variable:

Remarks:
> The recorded velocity change in MPH.

Range:

 Method: Enter a value _____

 Sources:

Form Screen Name: **Version of CDR used to read module**

Oracle Variable: EDR.EDRVERSION   143

Screen Name: Version of CDR used to read module

Form # - Name: 116 -

SAS Data Set:

SAS Variable:

Remarks:

    Specify version of software being used. Various versions of software for various makes/models of vehicles may be in use.
    Enter the version that was used to read the EDR in this car.

Range:

Method: Enter a value _____

Element Attributes:	Oracle Value	SAS Value
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999
Unknown version of software used to read the EDR.		

Sources:

Form Screen Name: **Model year**

Oracle Variable: VEHICLE.MODELYEAR   3207

Screen Name: Model year

Form # - Name: 1 -

SAS Data Set:

SAS Variable:

Remarks:
   Select the model year for which the vehicle was manufactured

Range:

Method: Enter Model Year ___ ___ ___ ___

		Oracle Value	SAS Value
Element Attributes:			
9999 Unknown		-9999	9999
Use only if the vehicle model year cannot be determined. This should occur rarely.			

Sources:

Form Screen Name: **Make**

  Oracle Variable: VEHICLE.MAKE   876

  Screen Name: Make

  Form # - Name: 2 -

  SAS Data Set:

  SAS Variable:

  Remarks:

      Select the make of this vehicle from the appendix list.

  Range:

  Method: Enter Make __ __ __ __ __ __ __ __ __ __ __

Element Attributes:	Oracle Value	SAS Value
9999 Unknown	-9999	9999
Unknown Make - Fill all spaces with 9s		

  Sources:

Form Screen Name: **Model**

195

Oracle Variable: VEHICLE.MODEL   875

Screen Name: Model

Form # - Name: 3 -

SAS Data Set:

SAS Variable:

Remarks:
     Select the vehicle model for this vehicle.

Range:

Method: Enter Model __ __ __ __ __ __ __ __ __ __

	Oracle Value	SAS Value
Element Attributes:		
9999 Unknown	-9999	9999
Unknown Model - Fill all spaces with 9s		

Sources:

Form Screen Name: **Body type**

Oracle Variable: VEHICLE.BODY_TYPE   877

Screen Name: Body type

Form # - Name: 4 -

SAS Data Set:

SAS Variable:

Remarks:

Convertible (excludes sun-roof, t-bar) refers to a passenger car equipped with a removable or retractable roof. To qualify for this attribute, the entire roof must open. Convertible roofs are generally fabric; however, removable hardtops are also included. This attribute takes priority over 2-door or 4-door attributes.

2-door sedan, hardtop, coupe refers to a passenger car equipped with two doors for ingress/egress and a separate trunk area for cargo (i.e., trunk lid hinged below the backlight). Folding rear seats do not necessarily violate the separate "trunk area" concept.

3-door/2-door hatchback refers to a passenger car equipped with two doors for ingress/egress and a rear hatch opening for cargo (i.e., hinged above the backlight). The cargo area is not permanently partitioned from the passenger compartment area. 17 3-door coupe refers to a passenger car equipped with three doors (two front seat and one rear seat) for ingress/egress and a separate trunk area for cargo (i.e., trunk lid hinged below the backlight). Folding rear seats do not necessarily violate the separate "trunk area" concept.

4-door sedan, hardtop refers to a passenger car equipped with four doors for ingress/egress and a separate trunk area for cargo (i.e., trunk lid hinged below the backlight). Folding rear seats do not necessarily violate the separate "trunk area" concept.

5-door/4-door hatchback refers to a passenger car equipped with four doors for ingress/egress and a rear hatch opening for cargo (i.e., hinged above the backlight). The cargo area is not permanently partitioned from the passenger compartment area.

Station wagon (excluding van and truck based) refers to a passenger car with an enlarged cargo area. The entire roof covering the cargo area is generally equal in height from front to rear and full height side glass is installed between the C and D-pillars. The rearmost area is not permanently partitioned from the forward passenger compartment area (e.g., "horizontal window shades" to hide cargo do not constitute partitions).

Hatchback, number of doors unknown refers to a passenger car with an unknown number of doors for ingress/egress and a rear hatch opening for cargo (i.e., hinged above the backlight). The cargo area is not permanently partitioned from the passenger compartment area.

Other automobile type refers to any passenger car that cannot be described by other automobile attributes.

Unknown automobile type is used when it is known that the vehicle is a passenger car, but there is insufficient data to determine the type. Automobile Derivatives This describes certain passenger cars that have been modified to perform cargo-related tasks.

Auto based pickup refers to a passenger car based, pickup type vehicle (includes El Camino, Caballero, Ranchero, Brat, and Rabbit pickup). The roof area (and side glass) rearward of the front seats on a station wagon have been removed and converted into a pickup-type cargo box.

Auto based panel refers an automotive station wagon that may have sheet metal rearward of the B-pillar rather than glass (cargo station wagon, auto based ambulance/hearse).

Large limousine refers to an automobile that has sections added within its wheelbase (more than four side doors) or stretched chassis to increase length and passenger/cargo carrying capacity .

Three-wheel automobile or automobile derivative refers to three-wheel vehicles with an enclosed passenger compartment. Utility Vehicles (<=4,536 kgs GVWR) Multi-purpose vehicles (MPV) are designed to have off-road capabilities. These vehicles are generally four wheel drive (4 x 4), have increased ground clearance, and are equipped with a strong frame.

Form Screen Name: Body type

Oracle Variable: VEHICLE.BODY_TYPE   877

Four wheel drive automobiles are not considered MPVs.

Compact utility refers to a short wheelbase and narrow tracked multi-purpose vehicle designed to operate in rugged terrain (examples include: 4-Runner, Amigo, Bravada, Bronco [76 and before], Bronco II, Cherokee [84 and after], Defender, Discovery, Dispatcher, Explorer, Geo Tracker, Golden Eagle, Grand Vitara, Jeep CJ-2 - CJ-7, Laredo, Montero, Mountaineer, Navajo, Passport, Pathfinder, Raider, RAV4, RX-300, Renegade, Rocky, Rodeo, S-10 Blazer, S-15 Jimmy, Samurai, Scrambler, Sidekick, Sportage, Thing, Trooper, Trooper II, Wrangler, Xterra, X-90)

Large utility refers to full-size multi-purpose vehicles primarily designed around a shortened pickup truck chassis. While generally a station wagon style body, some models are equipped with a removable top (examples include: Bronco-full-size [78 and after], full-size Blazer, full-size Jimmy, Hummer, Jeep Cherokee [83 and before], Durango, Escalade, Landcruiser, LX450, Navigator, Ramcharger, RangeRover, Scout, Tahoe, Trailduster, Yukon),

Utility station wagon refers primarily to a pickup truck based chassis enlarged to a station wagon (examples include: Chevrolet Suburban, Excursion, GMC Suburban, Travelall, Grand Wagoneer, includes suburban limousine) Utility, unknown body type is used when it is known that the vehicle is a utility vehicle, but there is insufficient data to determine the specific type. Class of Vehicle is entered as (Compact utility vehicle).

Van Based Light Trucks (<=4,536 kgs GVWR) Light trucks (<=4,536 kgs GVWR) are designed to maximize cargo/passenger area versus overall length. Basically a "box on wheels" these vehicles are identifiable by their enclosed cargo/passenger area and relatively short (or non-existent) hood.

Minivan refers to down-sized cargo or passenger vans examples include: Aerostar, Astro, Caravan, Expo Wagon, Grand Caravan, Grand Voyager, Lumina APV, Mazda MPV, Mini-Ram, Mitsubishi Minivan, Nissan Minivan, Odyssey, Previa, Quest, Safari, Sienna, Silhouette, Town and Country, Toyota Minivan, Toyota Van, Trans Sport, Vanagon/Camper, Venture, Villager, Vista, Voyager, Windstar)

Large van refers to a standard cargo or passenger van (examples include: B150-B350, Sportsman, Royal, Maxiwagon, Ram, Tradesman, Voyager [83 and before], E150-E350, Econoline, Clubwagon, Chateau, G10-G30, Chevy Van, Beauville, Sport Van, G15-G35, Rally Van, Vandura). These vans will generally have a larger capacity in both volume and GVWR.

Step van or walk-in van (<=4,536 kgs GVWR) refers to a multi-stop delivery vehicle with a GVWR less than or equal to 4,536 kilograms. Examples are the Grumman LLV used by the US Postal Service or the Aeromate manufactured by Utilimaster Motor Corporation.

Van based motorhome (<=4,536 kgs GVWR) refers to a van where the chassis and cab portions from the B-pillar forward of this vehicle are the same as in attributes minivan, large van, step van, however, a frame mounted recreational unit is added behind the driver/cab area. This attribute takes priority over attributes minivan and large van.

Van based school bus (<=4,536 kgs GVWR) is a passenger van designed to carry students (passengers) to and from educational facilities and/or related functions. The vehicles are characteristically painted yellow and clearly identified as school buses. Use this attribute regardless of whether the vehicle is owned by a school system or a private company. Van based school buses converted for other uses (e.g., church bus) also take this attribute.

Van based other bus (<=4,536 kgs GVWR) is a van derivative (e.g., taxi, small local transit) designed to carry passengers for low occupancy functions or purposes. Van based school buses do not use this attribute.

Other van type (Hi-Cube Van, Kary) refers to a cargo or delivery van where that chassis and cab portions from the B-pillar forward of this vehicle are the same as in Minivans and Large Vans with a frame mounted cargo area unit added behind the driver/cab area, or if the van cannot be described as a Minivan, Large Van, Step-van or a Van-based motorhome. Annotate the van type when using this attribute. This attribute takes priority over Minivans and Large Vans.

Unknown van type is used when it is known that this vehicle is a light van, but its specific type cannot be determined. Light Conventional Trucks (Pickup Style Cab, <=4,536 kgs GVWR) Light Conventional Trucks are used

Form Screen Name: Body type

Oracle Variable: VEHICLE.BODY_TYPE   877

to describe vehicles commonly referred to as pickup trucks and some of their derivatives. These light trucks are characteristically designed with a small cab containing a single row of seats (extended cabs with additional seats are available for some models), a large hood covering a conventional engine placement, and a separate open box area (approximately 180 to 240 centimeters long) for cargo.

Compact pickup is used to describe a pickup truck having a width of 178 centimeters or less. (examples include: Arrow Pickup [foreign], Colt P/U, Courier, D50, Dakota, Datsun/Nissan Pickup, Frontier, Hombre, LUV, Mazda Pickup, Mitsubishi Pickup, Pup, Ram 50, Ranger, S-10 , S-15, Sonoma, T-10, T-15, Tacoma, Toyota Pickup)

Large Pickup is used to describe a pickup truck having a width of greater than 178 centimeters (examples include: C10-C35, Comanche, D100-D350, F100-F350, Jeep Pickup, K10-K35, R100-R500, R10-R35, Ram Pickup, Sierra, Silverado, T100, V10-V35, W100-W350)

Pickup with slide-in camper is used to describe any pickup truck that is equipped with a slide-in camper. A slide-in camper is a unit that mounts within a pickup bed. Pickup bed caps, tonneau covers, or frame mounted campers are not applicable for this attribute.

Convertible pickup refers to a pickup truck equipped with a removable or retractable roof. To qualify for this attribute, the entire roof must open. Convertible roofs are generally fabric; however, removable hardtops are also included. This attribute takes priority over compact and large pickups.

Unknown pickup style light conventional truck is used when this vehicle is a Light Conventional Trucks, but there is insufficient data to determine the specific attribute.
Other Light Trucks (<=4,536 kgs. GVWR) Other Light Trucks are used to describe vehicles that are based upon a conventional light pickup frame, but a commercial or recreational body has been affixed to the frame rather than a pickup box.
Cab chassis based (includes rescue vehicles, light stake, dump, and tow truck) is used to describe a light vehicle with a pickup style cab and a commercial (non-pickup) body attached to the frame. Included are pickup based ambulances and tow trucks.
Truck based panel is used to describe a truck based station wagon that has sheet metal rather than glass above the beltline rearward of the B-pillars.

Light truck based motorhome (chassis mounted) is used to describe a frame mounted recreational unit attached to a light van or conventional chassis.

Other light conventional truck type is used for light conventional trucks that cannot be described elsewhere.

Unknown light truck type is used when it is known that the vehicle is a light truck chassis based vehicle but insufficient data exist to specify what type of light truck it is.

Unknown light vehicle type (automobile, utility, van, or light truck) is used when it is known that the vehicle is a light vehicle, but insufficient data exists to specify what type of light truck it is.

Buses (Excludes Van Based) Buses are defined as any medium/heavy motor vehicle designed primarily to transport large groups of passengers.

School bus (designed to carry students, not cross country or transit) is a bus designed to carry passengers to and from educational facilities and/or related functions. The vehicles are characteristically painted yellow and clearly identified as school buses. Use this attribute regardless of whether the vehicle is owned by a school system or a private company. School buses converted for other uses (e.g., church bus) also take this attribute.

Other bus type (e.g., transit, intercity, bus based motorhome) is a transport device designed to carry passengers for longer periods of time. These vehicles may be classified as over-the-road, transit, intercity, bus related motorhome (other than school bus based), or other.

Form Screen Name: **Body type**

Oracle Variable: VEHICLE.BODY_TYPE 877

Unknown bus type is used when it is known the transport device is a bus, but there is insufficient data to choose between attributes School bus and Other bus type.

Medium/Heavy Trucks (> 4,536 kgs GVWR) Medium/Heavy Trucks describe a single unit truck specifically designed for carrying cargo on the same chassis as the cab. They pertain to a truck-tractor designed for towing trailers or semi-trailers. Although towing is their primary purpose, some truck-tractors are equipped with cargo areas located rearward of the cab.

Step van (> 4,536 kgs GVWR) defines a single unit enclosed body with a GVWR greater than 4,536 kilograms and an integral driver's compartment and cargo area. Step vans are generally equipped with a folding driver seat mounted on a pedestal and a sliding door for easy ingress/egress.

Single unit straight truck (4,536 kgs <=GVWR <= 8,845 kgs) describes a non-articulated truck designed to carry cargo. The gross vehicle weight rating of the vehicle must exceed 4,536 kilograms and be less than or equal to 8,845 kilograms.

Single unit straight truck (8,845 kgs <= GVWR <= 11,793 kgs) describes a non-articulated truck designed to carry cargo. The gross vehicle weight rating of the vehicle must exceed 8,845 kilograms and be less than or equal to 11,793 kilograms.

Single unit straight truck (> 11,793 kgs GVWR) describes a non-articulated truck designed to transport cargo with a gross vehicle weight rating in excess of 11,793 kilograms. Use this attribute if it is known that the GVWR of a single unit straight truck is greater than 4,536 kilograms but there is insufficient data to specify the type of single unit truck

Single unit straight truck, GVWR unknown is used when the transport vehicle is a single unit straight truck but the GVWR is unknown.

Medium/heavy truck based motorhome describes a recreational vehicle mounted on a single unit medium/heavy truck chassis.

Truck-tractor with no cargo trailer describes a fifth wheel equipped tractor/trailer power unit with no trailer attached.

Truck-tractor pulling one trailer describes a fifth wheel equipped tractor (i.e., power unit of a tractor/trailer combination) pulling one semi-trailer.

Truck-tractor pulling two or more trailers describes a fifth wheel equipped tractor (i.e., power unit of a tractor/trailer combination) pulling a semi-trailer plus one or more trailers. These additional trailers may be attached with a standard hitch or a converter dolly (for semi-trailers).

Truck-tractor (unknown if pulling trailer) is used when the vehicle is known to be a truck-tractor, but it is unknown if a trailer was being towed or if more than one trailer was being towed.

Unknown medium/heavy truck type is used when the only available information indicates a truck of medium/heavy size.

Unknown truck type (light/medium/heavy) is used when it is known that this vehicle is a truck, but there is insufficient data to classify the vehicle further. Motored Cycles (Does Not Include All Terrain Vehicles/Cycles)

Motorcycle is used when the vehicle is a two-wheeled open (i.e., no enclosed body) vehicle propelled by an internal combustion engine. Motorcycles equipped with a side car also take this attribute.

Moped (motorized bicycle) is used when the vehicle is a motorized bicycle capable of moving either by pedaling or by an internal combustion engine.

Three-wheel motorcycle or moped is used when the vehicle is a three-wheeled open vehicle propelled by an internal combustion engine or a three-wheeled motorized bicycle capable of moving either by pedaling or by an internal combustion engine.

Form Screen Name: **Body type**

Oracle Variable: VEHICLE.BODY_TYPE   877

Other motored cycle (minibike, motor scooter) is used when the vehicle in question does not qualify for attributes Motorcycles, moped, three wheeled motorcycle or moped (e.g., motor scooter).

Unknown motored cycle type is used when it is known that the vehicle is a motored cycle, but no further data is available. Other Vehicles Other Vehicles describe all motored vehicles that are designed primarily for off-road use.

ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle) is used for off-road recreational vehicles which cannot be licensed for use on public roadways. ATVs have 4 or more wheels and ATCs have 2 or 3 wheels. Generally, the tires have low pressure and wide profile (i.e., flotation/balloon).

Snowmobile refers to a vehicle designed to be operated over snow propelled by an internal combustion engine.

Farm equipment other than trucks refers to farming implements other than trucks propelled by an internal combustion engine (e.g., farm tractors, combines, etc.).

Construction equipment other than trucks refers to construction equipment other than trucks propelled by an internal combustion engine (e.g., bulldozer, road grader, etc.).

Other vehicle type is used when the motorized vehicle in question does not qualify for Construction equipment other than trucks, Farm equipment other than trucks, Snowmobile, ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle) (e.g., go-cart, dune buggy, "kit" car, etc.).

Unknown Vehicle Type Unknown Vehicle Type describes all motored vehicles where the body type cannot be differentiated among a light vehicle type, bus, medium/heavy truck, motored cycle, or any other motored vehicle type.

Unknown body type is used when there is no available information regarding the type of vehicle. This lack of information prohibits the accurate classification of this vehicle within one of the preceding attributes.

Range:

Method: Select from appendix list _____

Sources:

Form Screen Name: **Class of Vehicle**   201

Oracle Variable: VEHICLE.HIT_CLASS   1266

Screen Name: Class of Vehicle

Form # - Name: 5 -

SAS Data Set:

SAS Variable:

Remarks:

The Passenger Car Classification Subcommittee, A3B11(1), of the Transportation Research Board, Traffic Records and Accident Analysis Committee, A3B11, assessed size based on the vehicle wheelbase. The guidelines for this classification can be found in the report entitled Recommended Definitions for Passenger Car Size Classification by Wheelbase and Weight, August 1984 by the previously mentioned subcommittee. This variable is the same variable that appears in the Identification section of the General Vehicle Form.

Range:

 Method: Select from appendix list _____

 Sources:

Form Screen Name: **Vehicle Identification Number**   202

Oracle Variable: VEHICLE.VIN   878

Screen Name: Vehicle Identification Number

Form # - Name: 6 -

SAS Data Set:

SAS Variable:

Remarks:

If a vehicle is inspected, if at all possible, the VIN must be obtained from the vehicle. If the VIN cannot be read from the cowl, door panel, glove box or trrunk lid, then other sources may be used.
The PAR may be used to obtain a VIN when a vehicle inspection is not required (i.e., non-tow CDS applicable and WinSMASH is not applicable; or Body Category, equals Buses, Medium/Heavy Trucks, Motorcycles, or Other Vehicles.
Enter the entire VIN; leave "blank" any column which does not have a VIN character.
If character of the VIN is missing or indecipherable, leave the column any such character would ordinarily occupy "blank".
Use VIN Assist, to check the VIN. Additionally, in NASSMAIN the VIN can be checked on the GV Form by going to Process / VIN Check Routine.
00000000000000000
enter a "0" in each position for vehicles not required to have a VIN (e.g., go cart).

99999999999999999
if the entire VIN is unknown, or missing enter a "9" in each position.

If the vehicle is a motor home or school bus, the vehicle chassis VIN is coded and the secondary
manufacturer's number should be annotated if indicated on the PAR.

If the vehicle is manufactured by the Ford Motor Company (prior to 1980) and the VIN begins or ends with a script, "F", the "F" is not entered. Proceed to the next character, as in the example below.
VIN: F 3 U 6 2 S 1 0 0 9 3 2 F
CODE: 3 U 6 2 S 1 0 0 9 3 2
In addition, if any hyphens, periods, or blank spaces are contained in the string of alphanumeric characters, ignore them as in the example below.
VIN: S M - E 3 0 7 6 4 2 1
CODE: S M E 3 0 7 6 4 2 1

Range:

Method: Enter VIN __ __ __ __ __ __ __ __ __ __

Element Attributes:	Oracle Value	SAS Value
9999 Unknown VIN - Fill all spaces with 9s If the entire VIN is unknown, or missing enter 99999999999999999	-9999	9999

Sources:

Form Screen Name: **Dominant color**

Oracle Variable: VEHICLE.COLOR   1042

Screen Name: Dominant color

Form # - Name: 7 -

SAS Data Set:

SAS Variable:

Remarks:

Enter the dominant color of the vehicle.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Black	1	1
2 Charcoal gray	2	2
Used for vehicles that are a dark gray.		
3 Light gray/silver	3	3
Used for vehicles that are gray or silver. Does not include darks grays		
4 Brown	4	4
5 Gold/tan/copper	5	5
Used for vehicles that are in the light brown famiy. Includes gold.		
6 Purple	6	6
Used for vehicles that are dark or light purple.		
7 Dark blue	7	7
Used for vehicles that are dark blue. Includes navy blue.		
8 Light blue	8	8
Used for vehicles that are light blue. Includes electric blue.		
9 Dark green	9	9
Used for vehicles that are dark green. Includes hunter/forest green.		
10 Light green	10	10
Used for vehicles that are light green. Includes lime green.		
11 Maroon	11	11
Used for vehicles that are much darker than red and have either a purple or a brown tint.		
12 Red	12	12
13 Orange	13	13
14 Yellow	14	14
15 White	15	15
16 Other (specify) :	16	16
9999 Unknown	-9999	9999
The color could not be determined due to the vehicle burning, hit and run or other inability to inspect and determine color.		

Sources:

Form Screen Name: **In-transport status**   204

Oracle Variable: VEHICLE.TRANSPORT   880

Screen Name: In-transport status

Form # - Name: 8 -

SAS Data Set:

SAS Variable:

Remarks:
This variable identifies the transport status of the vehicle. In-transport generally means in motion on a trafficway (except working vehicles) or stopped or in motion within the boundaries of a roadway. Not in transport generally means off the roadway and not in motion or off the trafficway. Working vehicles are exceptions to the previous categories.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 In transport Used when the vehicle has been determined to be a vehicle that is in-transport. This means the vehicle is in motion on a trafficway or any part of the vehicle is within the boundaries of the roadway. This is researcher determined and may not necessarily agree with the police report.	1	1
2 Not in transport Used for vehicles not in-transport. Not in-transport vehicles are defined as 1. Stationary vehicles outside the boundaries of the roadway 2. Stationary emergency vehicles in the roadway with emergency lights in operation. 3. Vehicles in motion outside the trafficway. This attribute is researcher determined and may not necessarily agree with the police report.	2	2
3 Working motor vehicle Used to indicate that this is a motor vehicle that was in the act of performing highway construction, maintenance or utility work when it became an involved unit. This work may be located within or outside the roadway boundaries, including portions of the highway closed for construction. This code does not include private construction/maintenance vehicles, or vehicles such as garbage trucks, delivery trucks, taxis, emergency vehicles, tow trucks, etc. Examples: 1. Steam roller working in a highway construction zone. 2. State highway maintenance crew mowing grass on roadside. 3. Utility truck performing maintenance on the power lines/lights along the roadway. This is researcher determined and may not necessarily agree with the police report.	3	3
9999 Unknown	-9999	9999

Sources:

Form Screen Name: **Parked vehicle location**

Oracle Variable: VEHICLE.OTHER_VEH_LOCATION   5355

Screen Name: Parked vehicle location

Form # - Name: 9 -

SAS Data Set:

SAS Variable:

Remarks:

A parked vehicle is either a not-in-transport motor vehicle or a working motor vehicle. A not-intransport motor vehicle is a motor vehicle which is stopped off the roadway, e.g., parked off the roadway. A working motor vehicle is a motor vehicle which is being used as equipment (e.g., a tow truck while using its winch or a pickup truck while being used to power a saw). This element is coded as to the location of the parked vehicle.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 On roadway	1	1
The roadway is that part of a trafficway designed, improved and ordinarily used for motor vehicle travel or, where various classes of motor vehicles are segregated, that part of a trafficway used by a particular class. Separate roadways may be provided for northbound and southbound traffic or for trucks and automobiles. The roadway and any shoulder alongside the roadway together make up the road.		
2 On shoulder	2	2
That part of a trafficway contiguous with the roadway for emergency use, for accommodation of stopped vehicles and for lateral support of the roadway structure.		
3 On median	3	3
That area of a divided trafficway between parallel roads separating the travelways for traffic in opposite directions. The principal functions of a median are to provide the desired freedom from interference of opposing traffic, to provide a recovery area for out-of-control vehicles, to provide a stopping area in case of emergencies, and to minimize headlight glare. Medians may be depressed, raised or flush. Flush medians can be as little as 4-feet wide between roadway edgelines. Painted roadway edgelines four (4) or more feet wide denote medians. Medians of lesser width must have a barrier to be considered a median.		
4 On roadside	4	4
Off the roadway, but inside the right-of-way. It is the outermost part of the trafficway which lay between the outer property line or other barrier and the edge of the first road encountered in the trafficway. Use this element if the parked vehicle is in a raised or painted island (directional or channeling).		
5 Outside trafficway	5	5
Used when the parked vehicle is outside the right-of-way.		
6 In parking lane	6	6

Form Screen Name: **Parked vehicle location**

Oracle Variable: VEHICLE.OTHER_VEH_LOCATION

5355

	Oracle Value	SAS Value
Element Attributes:		

Refers to a strip of road located on the roadway or next to the roadway, on which parking is permitted. This includes curb-side and edge-of-roadway parking (for example,
legal residential parking, city street parking, etc.). Sometimes a strip of roadway can be
designated for parking at certain hours of the day (parking lane) and for regular travel at other
hours (travel lane). This code should not be used during hours when parking is NOT permitted.

7 Gore	7	7

An area of land where two roadways diverge or converge. The area s bounded on two
sides by the edges of the roadway, which join at the point of divergence or convergence. The
direction of traffic must be the same on both of these roadways. The area includes
SHOULDERS or marked pavement if any, between the roadways. The third side is 60 meters
(approximately 200 feet) from the point of divergence or convergence or, if any other road is
within 70 meters (230 feet) of that point, a line 10 meters (33 feet) from the nearest edge of such
road.
Gore Inclusions:
- Areas at rest area or exit ramps
- Areas at truck weight station entry or exit ramps
- Areas where two main roadways diverge or converge
- Areas where a ramp and another roadway or two ramps, diverge or converge
- Areas where a frontage road and another roadway or two frontage roads diverge or
converge
- And others.
Gore Exclusions:
- Islands for channelizing of vehicle movements
- Islands for pedestrian refuge
- And others.

8 Separator	8	8

The area of a trafficway between parallel roads separating travel in the same direction or separating a frontage road from other roads. A Separator may be a physical barrier
or a depressed, raised, flush or vegetated area between roads.

9 Continuous left turn lane	9	9

A two-way left turn lane positioned between opposing straight through travel lanes.

10 Off roadway - location unknown	10	10

Refers to a location off the roadway, but its relationship to the right-of-way is not known.

9999 Unknown	-9999	9999

Coded only if the location of the parked vehicle cannot be established by any means.

Form Screen Name: **Age**

Oracle Variable: OCCUPANT.AGE   500

Screen Name: Age

Form # - Name: 1 - Age

SAS Data Set:

SAS Variable:

Remarks:

The nonmotorist's age at the time of the crash is recorded with respect to the nonmotorist's last birthday. If the occupant is 2 years old or older, enter the age in years, rounded to the last birthday.
If under the age of two years enter the age in months, rounded to the last month. If less than one month old enter one month.
If you are unable to obtain the age of a nonmotorist through an interview, enter unknown.

Range:

Method: Enter age _____ yrs _____ mos

		Oracle Value	SAS Value
Element Attributes:			
9999 Unknown		-9999	9999
Used when the age is unable to be determined from any source.			

Sources:

REVIEWER ASSESSMENT

Form Screen Name: Sex   319

  Oracle Variable: OCCUPANT.SEX_PREGNANCY   476

  Screen Name: Sex

  Form # - Name: 2 - Sex

  SAS Data Set:

  SAS Variable:

  Remarks:
    Sex

  Range:

  Method: Enter value in space

		Oracle Value	SAS Value
Element Attributes:			
1	Male	1	1
2	Female	2	2
9999	Unknown	-9999	9999

  Sources:

Form Screen Name: **Height**   320

  Oracle Variable: OCCUPANT.HEIGHT   484

  Screen Name: Height

  Form # - Name: 3 - How tall are you (in feet and inches)?

  SAS Data Set:

  SAS Variable:

  Remarks:

    Enter the height of the driver in feet and inches. It is not necessary to enter the height for any other occupant

  Range:

  Method: Enter Feet/ Inches _____' _____""

Element Attributes:	Oracle Value	SAS Value
9999 Unknown	-9999	9999

  Sources:

Form Screen Name: **Weight**   321

   Oracle Variable: OCCUPANT.WEIGHT   485

   Screen Name: Weight

   Form # - Name: 4 - What is your weight (in pounds)?

   SAS Data Set:

   SAS Variable:

   Remarks:
      Enter the weight of the driver in pounds. It is not necessary to enter the weight for any other occupant

   Range:

   Method: Enter pounds _____ lbs

Element Attributes:	Oracle Value	SAS Value
9999 Unknown	-9999	9999

   Sources:

Form Screen Name: **Seat Position**   322

Oracle Variable: OCCUPANT.SEATPOS   4433

Screen Name: Seat Position

Form # - Name :   5 -

SAS Data Set: SEATPOS

SAS Variable:

Remarks:

    The location of the occupant within the "seating" location grid of the vehicle, i.e. 11,12,13,21,22,23 etc. Please refer to the diagram below. Seating position does not equate to a seat being present at the time of the crash.

Range:

    11,12,13,14,15,21,22,23,24,25,31,32,33,34,35,41,42,43,44,45,51,52,53,54,55,96,97,-9999

Method: Enter Seat Position _____   _____

Element Attributes:	Oracle Value	SAS Value
11 Front row, left position	11	11
12 Front row, center position	12	12
13 Front row, right position	13	13
14 Front row, other (specify) :	14	14
15 Front row, on lap of another occupant	15	15
21 Second row, left position	21	21
22 Second row, center position	22	22
23 Second row, right position	23	23
24 Second row, other position	24	24
25 Second row, on lap of another occupant	25	25
31 Third row, left position	31	31
32 Third row, center position	32	32
33 Third row, right position	33	33
34 Third row, other position	34	34
35 Third row, on lap of another occupant	35	35
41 Fourth row, left position	41	41
42 Fourth row, center position	42	42
43 Fourth row, right position	43	43
44 Fourth row, other position	44	44
45 Fourth row, on lap of another occupant	45	45
51 Fifth row, left position	51	51
52 Fifth row, center position	52	52
53 Fifth row, right position	53	53
54 Fifth row, other position	54	54
55 Fifth row, on lap of another occupant	55	55
96 Other enclosed area	96	96

Form Screen Name: **Seat Position**   323

  Oracle Variable: OCCUPANT.SEATPOS   4433

Element Attributes:		Oracle Value	SAS Value
97	Other unenclosed area	97	97
9999	Unknown	-9999	9999
	Use when the researcher is unable to determine the seating position of this occupant. In or on vehicle unknown location		

  Sources:

      DRIVER INTERVIEW
      SURROGATE INTERVIEW
      REVIEWER ASSESSMENT
      RESEARCHER ASSESSMENT

Form Screen Name: **PAR KABCO rating occupant**   324

Oracle Variable: OCCUPANT.KABCOU_OCCUPANT   6769

Screen Name: PAR KABCO rating occupant

Form # - Name: 6 - PAR KABCO rating occupant

SAS Data Set:

SAS Variable:

Remarks:

Enter the police reported injury severity for this occupant.

It is possible that the police could have updated the PAR between the time of the crash and when the researcher obtained it. For example, a person might have been listed originally with incapacitating injuries. Later the person dies, and the PAR is changed accordingly. Therefore, use the latest information on the PAR at the time it was obtained from the police agency. If the police report contains a detailed description of the injuries but does not translate the injuries into the KABCO codes, use the police method for doing so.

For example, injuries which are considered to be of an incapacitating nature are classified as "A", nonincapacitating-evident injuries are classified as "B", and possible injuries are "C", Property damage only is classified as "O".

U - Injury, severity unknown is used when the police report indicates a "U" or in any other way communicates the idea that the person was injured but their severity is unknown.

Died prior to crash is only used if the police explicitly so indicate.

As a general rule, if the PAR is "blank" where the injury severity is assessed and the person was at the scene during the police investigation, then select O - No injury.

If the PAR is "blank" and the person was not present during the police investigation, then select Unknown.

Not all states use the KABCOU scheme. Please refer to the CDS sampling materials in the NASS End of Year package sent by NCSA to each PSU, for the latest translation of codes.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 O - No injury	1	1
2 C - Possible injury	2	2
3 B - Non-incapacitating injury	3	3
4 A - Incapacitating injury	4	4
5 K - Killed	5	5
6 U - Injury, severity unknown	6	6
7 Died prior to crash	7	7
9999 Unknown	-9999	9999

Sources:

Form Screen Name: **Transported to a treatment facility from the scene**   325

Oracle Variable: OCCUPANT.EMSTRANSPORT   4435

Screen Name: Transported to a treatment facility from the scene

Form # - Name: 7 -

SAS Data Set: TRANSPORT

SAS Variable:

Remarks:
   Determine if the occupant was transported to a treatment facility from the scene. Treatment facility includes physician's office, clinic, hospital, emergency clinic and trauma center. Do not consider the reason for transport when coding this variable.

Range:

 Method: Enter value in space

Element Attributes:	**Oracle Value**	**SAS Value**

1   Yes
  This occupant was taken directly from the scene of the crash to a treatment
  facility; trauma center, hospital, clinic or doctor's office.
	1	1

2   No
  This occupant was not taken directly from the scene of the crash to a
  treatment facility.
	2	2

9999 Unknown	-9999	9999

Sources:
            PAR
            RESEARCHER ASSESSMENT
            REVIEWER ASSESSMENT

Form Screen Name: **Occupant's Role**   326

Oracle Variable: OCCUPANT.ROLE   2178

Screen Name: Occupant's Role

Form # - Name: 8 -

SAS Data Set: Role

SAS Variable:

Remarks:
    Occupant's role in the vehicle

Range:

Method: Enter value in space

		Oracle Value	SAS Value
Element Attributes:			
1 Driver		1	1
Driver of the vehicle.			
2 Passenger		2	2
Passenger in the vehicle			

Sources:
        DRIVER INTERVIEW
        RESEARCHER ASSESSMENT

Form Screen Name: **Critical reason for critical pre-crash event**

Oracle Variable: NONMOTORIST.CRITICAL_REASON_YN   5975

Screen Name: Critical reason for critical pre-crash event

Form # - Name: 1 -

SAS Data Set:

SAS Variable:

Remarks:

This variable establishes the critical reason for the occurrence of the critical event. The critical reason is the immediate reason for this event and is often the last failure in the causal chain (i.e., closest in time to the critical precrash event).

Although the critical reason is an important part of the description of crash events, it is not the cause of the crash nor does it imply the assignment of fault. The concept of right-of-way and a number of other causal-related variables are coded in other locations on the Precrash Assessment Form. The primary purpose of the critical reason variable is to enhance the description of crash events and to thus allow analysts to better categorize similar events.

The following general guidelines apply to coding the critical reason for the critical event:
   --Generally, one critical reason is assigned per crash (NOTE: exception occurs in simultaneous events such as two vehicles entering an uncontrolled intersection at the same time).
   --Coded to vehicle/nonmotorist action/event that makes the collision inevitable.
   --Critical reason can be subjective in nature.
   --Final selection is based on the preponderance of evidence.

There is only one reason that can be assigned to the Nonmotorist.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No critical reason assigned to this person Used when the critical reason is coded to one of the vehicles or other nonmotorists involved in the crash sequence and this nonmotorist has no factors relative to the critical event.	1	1
2 Critical reason for critical event assigned to this person Used when the factors for this nonmotorist show a preponderance for the critical reason to this nonmotorist. All vehicles should be coded as No critical reason assigned to this vehicle, when this attribute is selected for the nonmotorist.	2	2

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Age**

Oracle Variable: NONMOTORIST.AGE   500

Screen Name: Age

Form # - Name: 2 - Age

SAS Data Set:

SAS Variable:

Remarks:
    The nonmotorist's age at the time of the crash is recorded with respect to the nonmotorist's last birthday. If the occupant is 2 years old or older, enter the age in years, rounded to the last birthday.
    If under the age of two years enter the age in months, rounded to the last month. If less than one month old enter one month.
    If you are unable to obtain the age of a nonmotorist through an interview, enter unknown.

Range:

Method: Enter age _____ yrs _____ mos

		Oracle Value	SAS Value
Element Attributes:			
9999 Unknown		-9999	9999
Used when the age is unable to be determined from any source.			

Sources:
        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name: **Sex**   367

  Oracle Variable: NONMOTORIST.SEX   501

  Screen Name: Sex

  Form # - Name: 3 - Sex

  SAS Data Set:

  SAS Variable:

  Remarks:
    Sex

  Range:

  Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	Male	1	1
2	Female	2	2
9999	Unknown	-9999	9999

  Sources:
        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name: **Type of nonmotorist**   368

 Oracle Variable: NONMOTORIST.NM_TYPE   493

 Screen Name: Type of nonmotorist

 Form # - Name: 4 - What were you doing prior to the crash (e.g. walking/running, cycling, skating, etc.)?

 SAS Data Set:

 SAS Variable:

 Remarks:
      This variable establishes the specific type of nonmotorist involved in the crash.

 Range:

 Method: Fill a single item

	Oracle Value	SAS Value
Element Attributes:		
1 Pedestrian	1	1
Used when the nonmotorist's primary method of movement is related to walking, jogging, running, etc. A nonmotorist seated on a bench is classified as a pedestrian.		
2 Bicyclist	2	2
Used when the nonmotorist's primary method of movement is related to pedaling some form of bicycle. Nonmotorists on tricycles and ¿big wheels¿ are classified in the other category.		
3 Skater	3	3
Used when the nonmotorist's primary method of movement is related skating (e.g., conventional skates, in-line roller blades, etc.).		
4 Other cyclist (specify) :	4	4
Used when the nonmotorist's method of movement is pedal-based but cannot be classified as a bicycle. Children on tricycles and big wheels are classified in this category.		
5 Other nonmotorist (specify) :	5	5
Used when the nonmotorist's method of movement is other than specified by preceding categories. Specify the nonmotorist type. Examples of other non-motorists include occupants of wagons, wheel chairs, strollers, etc. Individuals using scooters and other wheeled conveyances are also classified in this category.		
9999 Unknown	-9999	9999
Used when there is insufficient information to determine the type of nonmotorist involved.		

 Sources:
          RESEARCHER ASSESSMENT
          REVIEWER ASSESSMENT

Form Screen Name: **Nonmotorist's action relative to the roadway**   369

Oracle Variable: NONMOTORIST.NM_ACTION   2158

Screen Name: Nonmotorist's action relative to the roadway

Form # - Name: 5 - What action were you taking relative to the roadway?

SAS Data Set:

SAS Variable:

Remarks:
   This variable describes the direction of nonmotorist motion with respect to the roadway, prior to the nonmotorist's first avoidance action. If there are no avoidance actions, select the element value which describes the nonmotorist's motion with respect to the roadway, just prior to first impact. Thus, code 02 (Crossing road, straight) indicates the nonmotorist is crossing the road perpendicular to the traffic flow just prior to the nonmotorist's first avoidance action (or just prior to impact if there are no avoidance actions).

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Stopped Used when the pedestrian is in a stationary position.	1	1
2 Crossing road, straight Used when the pedestrian is crossing a road, moving, perpendicular to the traffic flow.	2	2
3 Crossing road, diagonally Used when the pedestrian is crossing a road and the travel direction is oblique to the traffic flow.	3	3
4 Moving in road, with traffic Used when the pedestrian is in the road and moving in the same direction as traffic flow.	4	4
5 Moving in road, against traffic Used when the pedestrian is in the road and moving in the opposite direction of the traffic flow.	5	5
6 Off road, approaching road Used when the pedestrian is not in the road, but is moving toward the road.	6	6
7 Off road, going away from road Used when the pedestrian is not in the road, but is moving in a direction that is away from the road.	7	7
8 Off road, moving parallel with traffic Used when the pedestrian is not in the road and is moving in a direction that is parallel to the road in the same direction as traffic is flowing.	8	8
9 Off road, moving parallel against traffic Used when the pedestrian is not in the road and is moving in a direction that is parallel to the road in the opposite direction that traffic is flowing.	9	9
10 Off road, crossing driveway Used when the pedestrian is off road, crossing a driveway, and is struck by a vehicle entering or leaving the driveway.	10	10
11 Off road, moving along driveway	11	11

Form Screen Name: **Nonmotorist's action relative to the roadway**   370

   Oracle Variable: NONMOTORIST.NM_ACTION   2158

		Oracle Value	SAS Value
Element Attributes:	Used when the pedestrian is off road, moving along the direction of the driveway, and is struck by a vehicle entering, leaving, or moving along the driveway.		
12	Other (specify) :	12	12
	Used when the pedestrian's action is not described in preceding elements. A brief annotation must be provided to describe the action.		
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine pedestrian action relative to the striking vehicle.		

   Sources:

        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name: **Nonmotorist's body orientation relative to vehicle**   371

Oracle Variable: NONMOTORIST.NM_ORIENTATION   2171

Screen Name: Nonmotorist's body orientation relative to vehicle

Form # - Name: 6 - Where were you relative to the vehicle? In which direction relative to the vehicle were you facing?

SAS Data Set:

SAS Variable:

Remarks:
    This variable describes the pedestrian's body orientation with respect to the striking vehicle prior to avoidance actions. "Facing vehicle" indicates the pedestrian's body (chest) is facing the path of travel of the striking vehicle (which may be tracking or yawing). View the pedestrian as having four planes (i.e., front, back, left, and right: Top and bottom planes are classified in the other category). Choose the plane that best indicates how the pedestrian was positioned prior to any avoidance actions. For example, if the left side and rear area of the pedestrian's body are exposed to the striking vehicle (i.e., 45 degrees off the assumed 90 degree orientation), then select element value "2" (Facing away) or element value "3" (Left side to vehicle) depending on the pedestrian's activity and action. If, as in this example, the pedestrian is crossing the road, select element value "3" (Left side to vehicle. If, however, the pedestrian is moving with or against traffic, then select element value "2" (Facing away). For orientations between 45 degrees and 90 degrees, select the element value based on the body area which is exposed the most (i.e., side or rear).

Range:

Method: Fill a single item

	Element Attributes:	Oracle Value	SAS Value
1	Facing vehicle Indicates the pedestrian's body (chest) is facing toward the contacting vehicle (which may be tracking or yawing).	1	1
2	Facing away from vehicle	2	2
3	Left side of body toward vehicle	3	3
4	Right side of body toward vehicle	4	4
5	Other (specify) :	5	5
9999	Unknown	9999	9999

Sources:
       RESEARCHER ASSESSMENT
       REVIEWER ASSESSMENT

Form Screen Name: **Motion of nonmotorist**   372

Oracle Variable: NONMOTORIST.NM_MOTION   2146

Screen Name: Motion of nonmotorist

Form # - Name: 7 - What was your motion just prior to impact?

SAS Data Set:

SAS Variable:

Remarks:

   Description of pre-avoidance motion of non-motorist

Range:

Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	Not moving Used when the pedestrian is stationary and includes crouching, kneeling, and bending at the waist.	1	1
2	Walking slowly Used when the pedestrian is advancing on foot in such a manner that part of one foot or the other is always in contact with the ground and pace is a normal walking stride.	2	2
3	Walking rapidly Used when the pedestrian is advancing at an accelerated rate (i.e., deliberately moving his/her legs quickly to achieve a more rapid advance than a normal walking stride, but not running).	3	3
4	Running or jogging Used when the pedestrian is moving rapidly in a manner where both feet are off the ground for a portion of each step.	4	4
5	Moving on skates/skate board	5	5
6	Cycling	6	6
7	Other (specify) : Used when the pedestrian's motion is not described in the above categories. A brief annotation describing the situation must be provided. This attribute includes hopping, jumping, skipping	7	7
9999	Unknown Used when there is insufficient information to determine pedestrian motion.	9999	9999

Sources:

   RESEARCHER ASSESSMENT
   REVIEWER ASSESSMENT

Form Screen Name: **Position of nonmotorist**   373

Oracle Variable: NONMOTORIST.NM_ATTITUDE   2139

Screen Name: Position of nonmotorist

Form # - Name: 8 -   What position were you in just prior to impact (e.g. standing, crouching, kneeling)?

SAS Data Set:

SAS Variable:

Remarks:
This variable describes the pedestrian's vertical orientation just prior to the pedestrian's first avoidance action. If there are no avoidance actions, code the attribute which best describes the pedestrian's vertical orientation just prior to the first impact. Individuals who are standing in a stationary position, walking, or running are all classified as standing. Variations in the range of upright positions are distinguished in the next variable (i.e., Pedestrian Motion).

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Standing Used when the pedestrian is upright on both feet. This category includes pedestrians who are leaning to one side or are leaning against an object. It also includes pedestrians who are walking, running, hopping, skipping, or jumping.	1	1
2 Crouching Used when the pedestrian is stooped down or bent low by using the knees as a pivot point.	2	2
3 Kneeling Used when at least one knee of the pedestrian is in contact with the ground or an object.	3	3
4 Bending at waist Used when the pedestrian is bent over using the hips as the pivot point.	4	4
5 Moving on skates/skate board	5	5
6 Other (specify) : Used when the non-motorist's attitude is not covered by preceding categories. Examples include the non-motorist seated on a bench and/or lying in the roadway. Specify the pre-crash attitude.	6	6
9999 Unknown Used when there is insufficient information to determine the non-motorist's attitude.	9999	9999

Sources:
RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Nonmotorist using cell phone precrash**   374

Oracle Variable: NONMOTORIST.CELL_TALK_NM   6924

Screen Name: Nonmotorist using cell phone precrash

Form # - Name: 9 - Were you using a cell phone just prior to the crash?

SAS Data Set:

SAS Variable:

Remarks:
    Determine if the nonmotorist was using a cellular phone during the precrash phase.

Range:

Method: Fill a single item

	Element Attributes:	**Oracle Value**	**SAS Value**
1	Yes	1	1
	Used when it can be determined that the nonmotorist was talking on a cell phone at the time of the crash.		
2	No	2	2
	Used when it is determined that the nonmotorist was not talking on the cell phone at the time of the crash.		
9999	Unknown	-9999	9999
	Used when it cannot be determined that the nonmotorist was talking on the cell phone at the time of the crash.		

Sources:

    RESEARCHER ASSESSMENT
    REVIEWER ASSESSMENT

Form Screen Name: **Illness**   375

Oracle Variable: NONMOTORIST.ILLNESS   3299

Screen Name: Illness

Form # - Name: 10 - Were you ill at the time of the crash?

SAS Data Set:

SAS Variable:

Remarks:
   This element value establishes the possibility of an illness influence on the driver's performance. Major medical problems
   (i.e., heart attack, seizure) should have medical verification.

Range:

 Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No	1	1
Used when the driver is not ill.		
2 Yes	2	2
9999 Unknown	-9999	9999

Sources:
         RESEARCHER ASSESSMENT
         REVIEWER ASSESSMENT

Form Screen Name: **Police reported drug presence**   376

Oracle Variable: NONMOTORIST.PAR_DRUG_PRES   3171

Screen Name: Police reported drug presence

Form # - Name: 11 -

SAS Data Set:

SAS Variable:

Remarks:

The phrase "other drug present" includes all prescription, "over-the-counter" medications, as well as "illicit" substances (e.g., in most cases, marijuana, cocaine, heroin), . Also, "other drug present" means that the driver had ingested an other drug prior to the crash, but it is not an indication that the drug usage was in any way the cause of the crash (or event), even though it may have been. Finding other drugs in the vehicle does not by itself constitute presence. This element value documents presence of illegal drugs in the driver's system. Code all reported drugs. Entries should be recorded in the order of concentration (i.e., the drug appearing at the highest concentration level should be recorded first). If concentration levels are unknown, record drugs in alphabetical order. A "presumptive" coding approach is used with respect to this variable. Specifically, it is assumed that illegal drugs are not involved unless there are positive test results or other official records indicating involvement. In this circumstance, Researcher field observations and the observations of other on-scene personnel (i.e., police officers, EMTs, and truck inspection personnel) may be used as a basis for coding unknown (99) in the absence of test results and/or other official records.

Range:

Method: Fill a single item

	Element Attributes:	**Oracle Value**	**SAS Value**
1	No	1	1
	Used when the PAR indicates no illegal drugs are used by this driver.		
2	Yes (specify) :	2	2
	Used when drugs are indicated for this driver. Record drug under DRUGTYPE variable.		
3	Yes - none specified	3	3
	Used when drugs are noted for this driver but type(s) are unknown.		
9999	Unknown	-9999	9999

Sources:

PAR

Form Screen Name:　　**Police reported alcohol presence**　　　　　　　377

Oracle Variable:　　NONMOTORIST.POLICE_ALCOHOL　　　　　　5984

Screen Name:　　Police reported alcohol presence

Form # - Name:　　12 -

SAS Data Set:

SAS Variable:

Remarks:

　　PAR reported alcohol presence. If the PAR shows alcohol presence in any manner, check box, narrative, etc. this variable must be coded Yes.

Range:

Method:

Element Attributes:	Oracle Value	SAS Value
1　No	1	1
2　Yes	2	2
9999　Unknown	-9999	9999

Sources:

　　PAR

Form Screen Name: **Pre-event movement**

Oracle Variable: PRECRASH.PRE_EVENT_MOVEMENT   1372

Screen Name: Pre-event movement

Form # - Name: 1 - What was the movement of your vehicle just before you realized a crash was imminent?

SAS Data Set:

SAS Variable:

Remarks:

This variable establishes the subject vehicle's pre-critical event movement pattern. Accurate assessment of this movement pattern requires the researcher to understand and recognize the specific point in time when the pre-event movement pattern is to be described/documented. Key elements of the decision process are described in the material that follows:

Critical Precrash Envelope

The critical precrash envelope is that period of time which immediately precedes the crash event and which contains both the Critical pre-crash event and the Critical reason for the critical event . This envelope begins at the point where:
    --The driver recognizes an impending danger (e.g. deer runs into the roadway), or
    --The vehicle is on an imminent collision path with another vehicle, pedestrian, pedalcyclist, other non-motorist, object, or animal.

The critical precrash envelope ends at the point where:
    --The driver has completed a successful avoidance maneuver, has regained full steering control, and the vehicle is tracking; or
    --The driver's vehicle impacts another vehicle, pedestrian, pedalcyclist, other nonmotorist, object, or animal.

The critical precrash envelope is shown is schematic form in Figure 1 below. It is important to note that Figure 1 depicts the coding order of a typical single critical crash envelope and that the pre-event movement pattern is not considered to be part of this critical crash envelope.
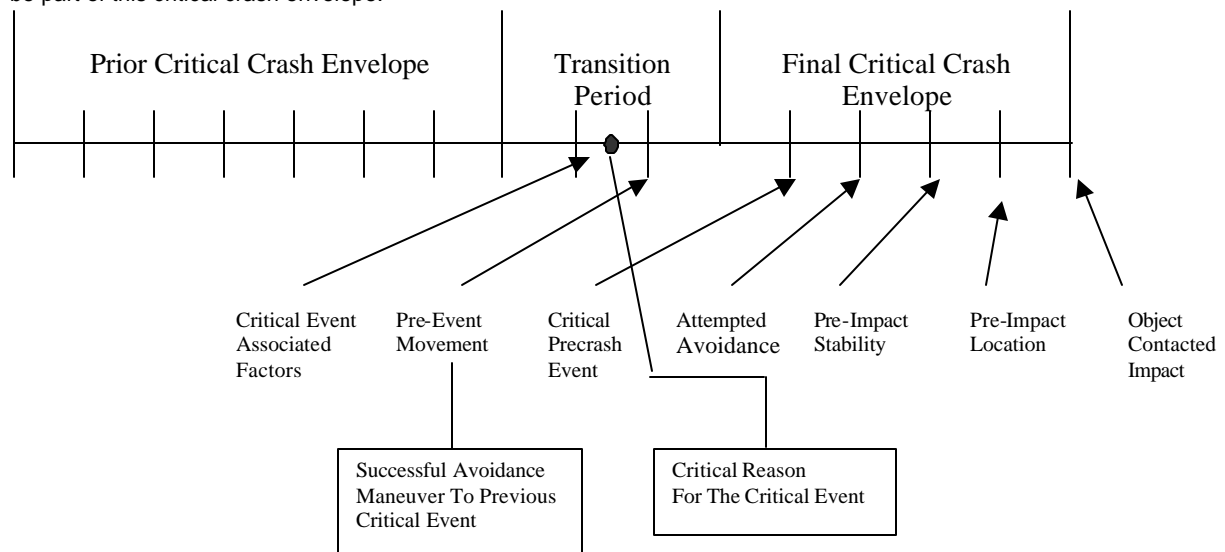
Figure 1 Vehicle's Critical Crash Envelope

Single and multiple critical crash envelopes are further discussed in Critical pre-crash event and the Critical reason for the critical event. The discussion at this point will focus on the Pre-event movement pattern, which immediately precedes the critical crash envelope.

Selection of Pre-event Movement Interval

A relatively straightforward crash sequence provides definition of the specific time interval when the pre-event movement pattern is to be described. This example is shown in schematic form in Figure 2 and is described as follows:

Vehicle 1 and Vehicle 2 are traveling in opposite directions on the same roadway. The driver of Vehicle 1 falls asleep and crosses over the center line into the travel lane of Vehicle 2. The driver of Vehicle 2 attempts to avoid Vehicle 1 by steering to the right and braking. The front of Vehicle 1 strikes the left front fender and door of Vehicle 2 with the point of impact located near the north edge of the roadway.

In this example, Vehicle 1 has a single critical crash envelope (V1CCE) which begins at the point where Vehicle 1 crosses the center line and ends at the point of impact with Vehicle 2. Vehicle 1's pre-event movement pattern is described immediately prior to the drift to the left and is, therefore, coded as Going straight. Vehicle 2 also has a single critical crash envelope (V2CCE) which begins at the point where Driver 2 recognized Vehicle 1 is encroaching into vehicle 2's travel lane and ends at the point of impact. Vehicles 2's pre-event movement pattern is described immediately prior to the avoidance maneuver and is, therefore, coded as Going straight.
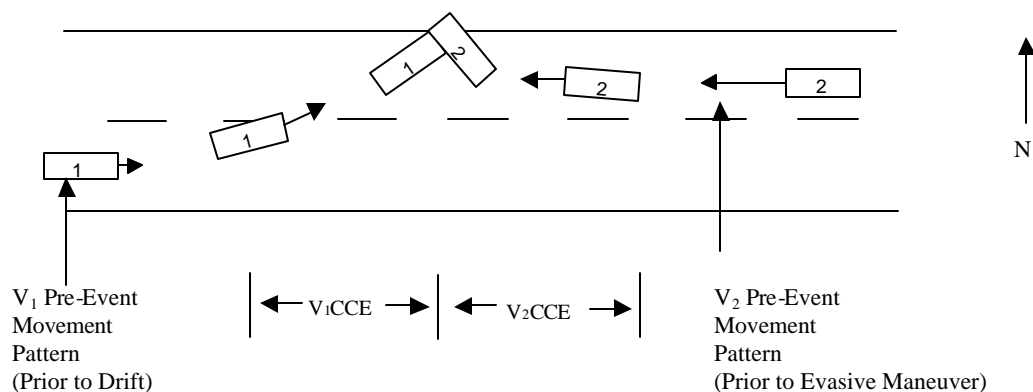
Figure 2:   Critical Crash Envelopes and Pre-Event Movement Patterns For Opposite
Direction Crash

Form Screen Name: Pre-event movement

Oracle Variable: PRECRASH.PRE_EVENT_MOVEMENT   1372

As indicated in the preceding discussion and in Figure 2, the pre-event movement pattern is described at a point which both precedes the critical crash envelope and which precedes vehicle motions that place the involved vehicles on an imminent collision path. In the current example, both the evasive maneuver by Driver 2 and the pre-impact drift to the left by Driver 1 are not described. While the intent of this variable is fairly evident here, there are other examples which demonstrate that timing issues can create some difficulty with respect to accurately describing pre-event movement patterns. An example of this type of event is shown in schematic form in Figure 3 and is described as follows:

Vehicle 1 is eastbound on a two-lane roadway, approaching an intersection. Driver 1 stops for the stop sign, checks for cross traffic, does not see Vehicle 2 approaching from his left, and accelerates into the intersection. Vehicle 2 is southbound on the intersecting roadway and does not have a stop sign (i.e. Driver 2 has the right of way). Driver 2 notes Vehicle 1 beginning to enter the intersection and accelerates in an attempt to get by Vehicle 1. The front of Vehicle 1 strikes the right rear door and quarter panel of Vehicle 2.

In this example, Vehicle 1 has a single critical crash envelope (V1CCE), which begins at the point where Vehicle 1 crosses the intersection boundary and ends at the point of impact with Vehicle 2. Vehicle 1's pre-event movement pattern is described immediately prior to the point where Vehicle 1 begins moving forward and is, therefore, coded as Stopped in traffic lane. Vehicle 2 also has a single critical crash envelope (V2CCE) which begins at the point where driver recognizes Vehicle is encroaching into the intersection and ends at the point of impact. Vehicle 2's pre-event movement pattern is described immediately prior to the acceleration avoidance maneuver and is, therefore, coded as Going straight.
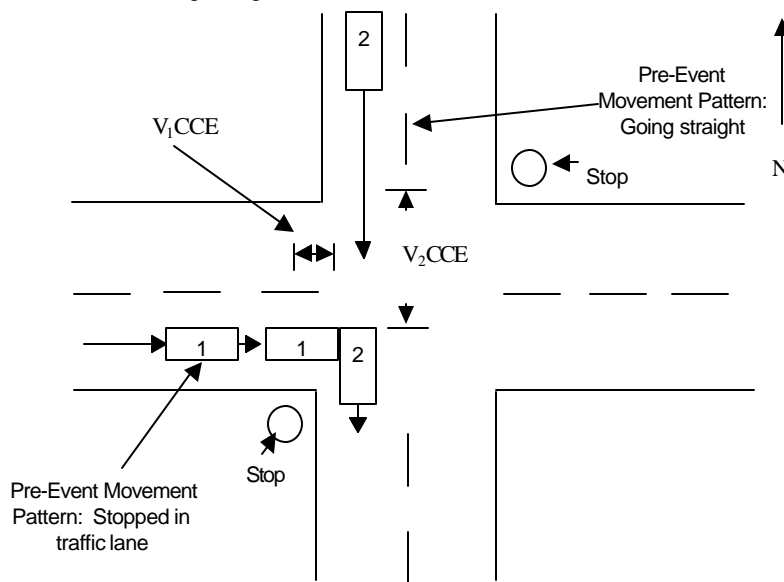

Figure 3: Critical Crash Envelopes and Pre-Event Movement Patterns
For Intersection Crash

Difficulty is encountered with the configuration shown in Figure 3 simply as a result of the large number of variations which are similar in nature. For example, assume the circumstance where Vehicle 1 in Figure 3 does not decelerate prior to impact (i.e. Driver 1 is inattentive to the driving task and violates the stop sign). In this case, the pre-event movement of Vehicle 1 is coded as Going straight as opposed to Stopped in traffic lane. Similarly, if Driver 1 braked late for the stop sign (as a result of being inattentive), came to a stop with the front of Vehicle 1 protruding into the intersection, and then Vehicle 2 rakes across Vehicle 1's front as Vehicle 2 passes Vehicle 1's location, then the pre-event movement pattern of Vehicle 1 is coded as Decelerating in traffic lane as opposed to Going straight or Stopped in traffic.

These different coding results are tied to timing nuances in the crash configurations. It is, therefore, important to remember that pre-event movement patterns are typically described two stages prior to crash occurrence. In the last example, Vehicle 1 is stopped at impact and the stage which precedes the stop is the deceleration stage. In the frst example in this paragraph, Driver 1 is going straight while within the critical crash envelope and is also going straight prior to the critical crash envelope (i.e., second stage back)

Form Screen Name: **Pre-event movement**   381

 Oracle Variable: PRECRASH.PRE_EVENT_MOVEMENT

Range:

Method: Fill a single item

	Oracle Value	SAS Value
Element Attributes:		
1 Going straight	1	1
Used when this vehicle's path of travel is straight ahead without any attempted or intended changes.		
2 Decelerating in traffic lane	2	2
Used when this vehicle is traveling straight ahead within the traffic lane and is decelerating.		
3 Accelerating in traffic lane	3	3
Used when this vehicle is traveling straight ahead within the traffic lane and is accelerating.		
4 Starting in traffic lane	4	4
Used when this vehicle is in the process of starting forward from a stopped position within the traffic lane (e.g. start up from traffic signal).		

Form Screen Name: **Pre-event movement**

Oracle Variable: PRECRASH.PRE_EVENT_MOVEMENT   1372

		Oracle Value	SAS Value
Element Attributes:			
5	Stopped in traffic lane	5	5
	Used when this vehicle is stopped momentarily, with the motor running within the traffic lane (e.g. stopped for traffic signal).		
6	Passing or overtaking another vehicle	6	6
	Used when this vehicle is traveling straight ahead and is in the process of passing or overtaking another vehicle on the left or right.		
7	Disabled or parked in travel lane	7	7
	Used when this vehicle is parked in a travel lane (e.g. double parked, disabled) with a driver present in the vehicle.		
8	Leaving a parking position	8	8
	Used when this vehicle is entering the travel lane from a parking area adjacent to the traffic lanes.		
9	Entering a parking position	9	9
	Used when this vehicle is leaving the travel lane to a parking area adjacent to the traffic lanes (i.e. in the process of parking).		
10	Turning right	10	10
	Turning right is used when this vehicle is moving forward and turns right, changing lanes from one roadway to a different roadway (e.g. from or to a driveway, parking lot, or intersection).		
11	Turning left	11	11
	Turning left is used when this vehicle is moving forward and turns left, changing lanes from one roadway to a different roadway (e.g. from or to a driveway, parking lot, or intersection).		
12	Making a U-turn	12	12
	Making a U-turn is used when this vehicle is making a U-turn (i.e. 180 degree directional change) on the roadway.		
13	Backing up (other than for parking position)	13	13
	Used when this vehicle is traveling backwards within the trafficway. Do not use this code if the vehicle is backing into a parking space. Use Entering a parking position.		
14	Negotiating a curve	14	14
	Used when this vehicle is continuing along a roadway that curves to the right or left.		
15	Changing lanes	15	15
	Changing lanes is used when this vehicle is traveling straight ahead and changes travel lanes to the right or left while on the same roadway.		
16	Merging	16	16
	Merging is used when this vehicle is moving forward and merging from the left or right into a traffic lane (e.g. roadway narrows, exit/entrance ramps).		
17	Successful avoidance maneuver to a previous critical event	17	17
	Used when this vehicle responded to a previous critical event and successfully avoided an impact. However, this precipitates a subsequent critical crash envelope which results in this vehicle's first impact.		
18	Other (specify) :	18	18

Form Screen Name: Pre-event movement   383

  Oracle Variable: PRECRASH.PRE_EVENT_MOVEMENT   1372

		Oracle Value	**SAS Value**
Element Attributes:	Used when this vehicle's pre-event movement is known but none of the specified codes are applicable. Specify the movement pattern.		
8888	No driver present	-8888	8888
	Used if no driver is in the vehicle when the crash occurs.		
9999	Unknown	-9999	9999
	Unknown is used when the vehicle's movement prior to the driver's realization of an impending critical event is unknown.		

  Sources:

          RESEARCHER ASSESSMENT
          REVIEWER ASSESSMENT

Form Screen Name: Critical pre-crash event

Oracle Variable: PRECRASH.CRITICAL_EVENT   2846

Screen Name: Critical pre-crash event

Form # - Name: 2 -

SAS Data Set:

SAS Variable:

Remarks:

This variable identifies the event which made the crash imminent (i.e. something occurred which made the collision inevitable). A Critical precrash event is coded for each vehicle in the crash and documents the circumstances leading to this vehicle's first impact in the crash sequence.

Responses are grouped into seven major categories which are prioritized as follows:
   __ This Vehicle Loss Of Control Due To
   __ This Vehicle Traveling
   __ Other Motor Vehicle In Lane
   __ Other Motor Vehicle Encroaching Into Lane
   __ Pedestrian, Pedalcyclist, Or Other Nonmotorist
   __ Object Or Animal
   __ Other

The critical precrash event is typically coded in relation to the pedestrian, nonmotorist, object, or animal that the subject vehicle is attempting to avoid. There are other circumstances/events that can be considered critical events. In general, however, the reviewer should:
   __ Focus on the first event in the crash, and
   __ Use all available information to determine the specific event that made the crash inevitable.

It is important to note that culpability/fault is not considered when making the critical event determination. Many crash scenarios will suggest fault, but this should be viewed as coincidental rather than by design. As an example, consider the circumstance where Vehicle 1 is Traveling too fast for conditions when Vehicle 2 crosses Vehicle 1's path from a driveway (see From driveway, across path). In this circumstance, the Critical precrash event for Vehicle 1 is Vehicle 2's movement across Vehicle 1's path and not Vehicle 1's travel speed. Additional examples of specific critical events are provided in the material following Critical reason for the critical event.

The content and coding order of single critical crash envelopes was discussed in the preceding variable, Pre-event movement. There are a number of crash situations that involve multiple critical crash envelopes for the involved vehicle(s). In this circumstance, there are two directives that should be observed as follows:
   __ For vehicles experiencing multiple critical crash envelopes, the final critical crash envelope is used to define the critical precrash event.
   __ Pre-event movement prior to the final critical crash envelope is typically coded as a Successful avoidance maneuver to a previous critical event.

An example of a crash sequence involving multiple critical crash envelopes is shown in Figure 4 and may be described as follows:

Vehicle 1 is eastbound and is passing through an intersection without a traffic control. A noncontact vehicle (NCV) is northbound and is stopped at the intersection on a crossing roadway that has a stop sign. The driver of the noncontact vehicle did not see Vehicle 1 approaching from his left and turns right into the travel path of Vehicle 1. The driver of Vehicle 1 brakes (without lockup) and steers left to avoid the noncontact vehicle. Driver 1 successfully avoids the noncontact vehicle, maintaining full steering control, but consequently places Vehicle 1 in the travel path of Vehicle 2 which is approaching the intersection proceeding in a westerly direction. Driver 2 attempts to avoid Vehicle 1 by steering right and braking (with lockup). Driver 1 attempts to avoid Vehicle 2 by also steering right and braking (with lockup). A subsequent left front to left front impact between Vehicles 1 and 2 occurs in Vehicle 2's travel lane.

In this example, Vehicle 1 has two critical crash envelopes (V1CCE1 and V1CCE2). Vehicle 1's first critical crash envelope (V1CCE1) ends at the point where Driver 1 successfully completes the avoidance maneuver (while maintaining full steering control of Vehicle 1). This vehicle's second critical crash envelope (V1CCE2) begins immediately following the successful avoidance maneuver and ends at the point of impact with Vehicle 2.

Oracle Variable: PRECRASH.CRITICAL_EVENT   2846

The relevant envelope with respect to causal coding is the envelope which results in Vehicle 1's critical pre-crash event (V1CCE2). Vehicle 1's Pre-event movement is coded as a Successful avoidance maneuver to a previous critical event and Vehicle 1's critical precrash event is coded as This vehicle traveling over the laneline on left side of travel lane.

Vehicle 2 has one critical crash envelope (V2CCE), which begins at the point where Driver 2 recognizes Vehicle 1 intruding into his/her travel lane and ends at the point of impact with Vehicle 1. This vehicle's pre-event movement is coded as Going straight and its critical precrash event is coded as Other motor vehicle in lane traveling in opposite direction.

$$V_1CCE_1 \qquad V_1CCE_2 \qquad V_2CCE$$
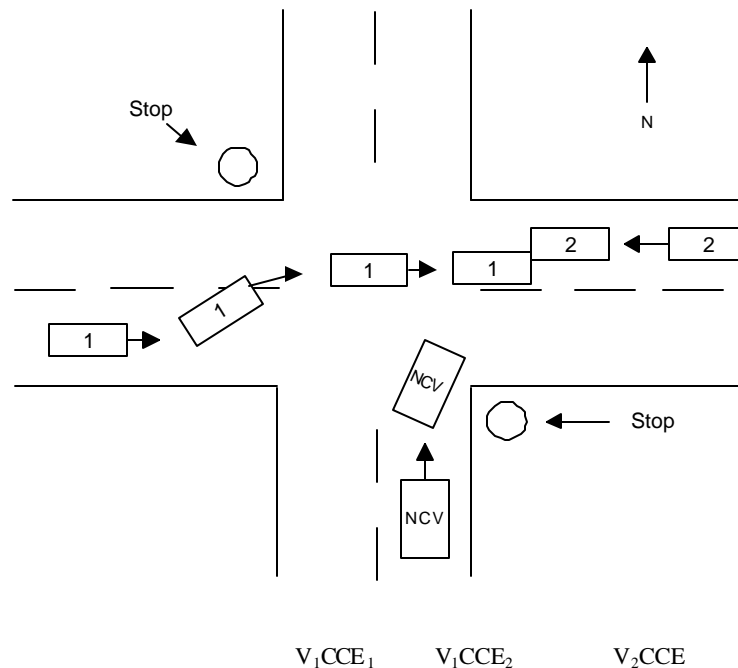
Figure 4: Intersection Crash Involving Multiple Critical Crash Envelopes

The noncontact vehicle in this example was not involved in an impact in the sequence of crash event and is, therefore, not assigned a Precrash Assessment From or coded into the causal data system.

A simplified schematic representation of Vehicle 1's critical crash envelopes is provided in Figure 5. It is important to note that the transition period between crash envelopes as shown in Figure 5 may be very short in terms of time duration.
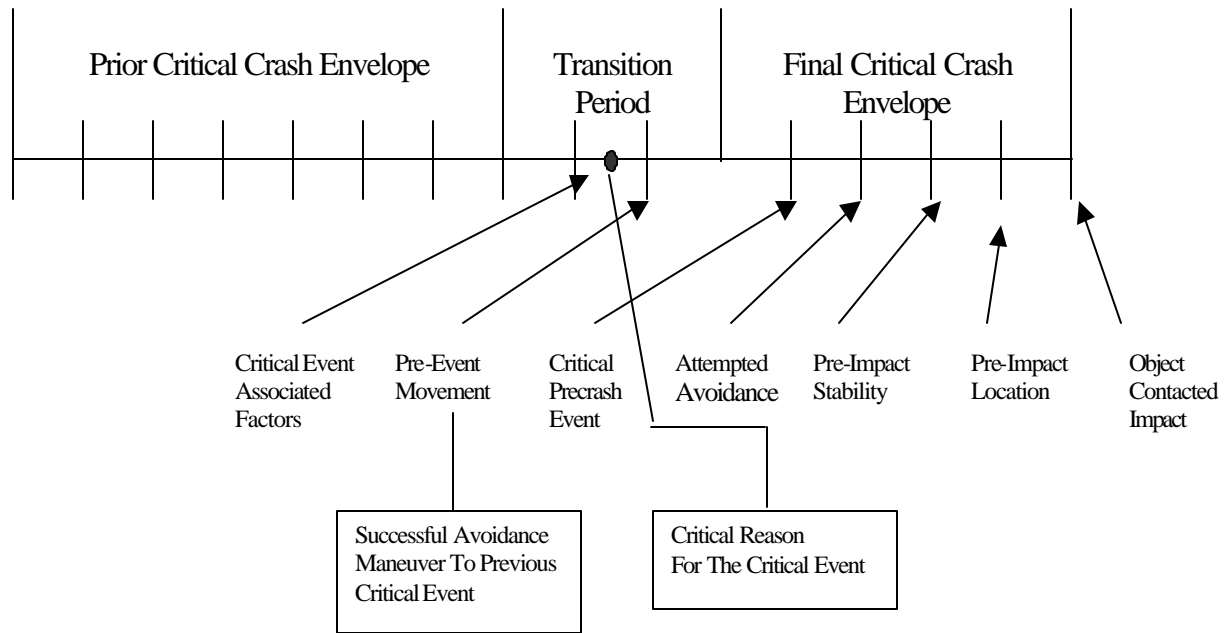
| Prior Critical Crash Envelope | Transition Period | Final Critical Crash Envelope |

Critical Event Associated Factors

Pre-Event Movement

Critical Precrash Event

Attempted Avoidance

Pre-Impact Stability

Pre-Impact Location

Object Contacted Impact

Successful Avoidance Maneuver To Previous Critical Event

Critical Reason For The Critical Event

Figure 5 Vehicle's Critical Crash Envelope

Form Screen Name: Critical pre-crash event

387

Oracle Variable: PRECRASH.CRITICAL_EVENT

Range:

Method: Fill a single item

	Oracle Value	SAS Value
Element Attributes:		
This Veh. Control Loss Due		
1 Blow out/flat tire, (specify) : Used when a vehicle in motion loses control as the result of a tire "air out." When this is coded, annotate the tire variable on the General Vehicle form.	1	1
2 Stalled engine Used when a vehicle in motion loses engine power. A stalled engine situation must precipitate a collision to be coded in this variable. A vehicle which is stopped as the result of an engine malfunction does not take this code.	2	2
3 Disabling vehicle failure (e.g., wheel fell off) (specify) : Used when a mechanical malfunction, such as a component of the vehicle suspension or steering system, leads to the critical reason for the collision. Specify which component failure was involved in the space provided under this element.	3	3
4 Non-disabling vehicle problem (e.g., hood flew up) (specify) : Used when some mechanical abnormality occurred to this vehicle which leads to the critical reason for the collision. The abnormality must not be disabling damage. A space is provided under this element to specify the non-disabling vehicle problem.	4	4
5 Poor road conditions (puddle, pot hole, ice, etc.) (specify) : Used when there is control loss due to environmental conditions of the roadway. These conditions must have initiated the precrash event which resulted in the collision. A space is provided under this element to specify the road condition attributed to initiating the precrash event.	5	5
6 Traveling too fast for conditions	6	6

Form Screen Name: **Critical pre-crash event**   388

  Oracle Variable: PRECRASH.CRITICAL_EVENT   2846

			Oracle Value	SAS Value

  Element Attributes:

Identifies this vehicle's movement relative to its surroundings in which the subsequent loss of control led to the collision. An example is a roadway departure on a curve where the driver fails to negotiate the curve and departs the roadway resulting in an impact. If the driver merely steers straight while in a curve and departs the roadway, then attributes Over the lane line on left side of travel lane, Over the lane line on right side of travel lane, Off the edge of the road on the left side, Off the edge of the road on the right side may apply.

			Oracle Value	SAS Value
7	Jackknife Event		7	7

Used when the control loss is associated with a jackknife event. For this variable, tractor jackknife events and trailer swing events are both considered to be jackknife events. A steering loss of control which precipitates the jackknife event is coded under this element (i.e., contro recovery is prohibited by the jackknife).

			Oracle Value	SAS Value
8	Cargo Shift		8	8

Used when the control loss is associated with/results from a cargo shift event. In this circumstance, the cargo shift must occur prior to or simultaneously with the control loss.

			Oracle Value	SAS Value
9	Other cause of control loss (specify) :		9	9

Used when it is determined that this vehicle's loss of control is the primary reason which makes the event critical and the previous loss of control attributes do not adequately identify the control loss condition. Illness would be included here. The condition cited should be annotated.

			Oracle Value	SAS Value
19	Unknown cause of control loss		19	19

Used when it is known that a control loss made the situation critical, but it is not known whether the vehicle or the environment causes the control loss.

This Vehicle Traveling

			Oracle Value	SAS Value
20	Over the lane line on left side of travel lane		20	20

Used when this vehicle departs its lane to the left and is entering or had entered the adjoining lane or shoulder. To use this code, change of travel path by this vehicle must precipitate the critical event for the collision. As an example, this vehicle attempts to pass another vehicle on the other vehicle's left and is struck by a vehicle traveling within its travel lane in the opposite direction. The correct code for this vehicle would be Over the lane line on left side of travel lane. However, by modifying the scenario slightly the lane change may not always be the factor leading to the precrash event. Consider the same situation where this vehicle is passing to the left of the lead vehicle. If an animal runs into the roadway and is struck by this vehicle, then the correct choice would be Animal in roadway.

			Oracle Value	SAS Value
21	Over the lane line on right side of travel lane		21	21

Form Screen Name: **Critical pre-crash event**   389

  Oracle Variable: PRECRASH.CRITICAL_EVENT   2846

	Oracle Value	SAS Value
Element Attributes: Used when this vehicle departs its lane to the right and is entering or had entered the adjoining lane or shoulder. To use this code, change of travel path by this vehicle must precipitate the critical event for the collision. As an example, this vehicle attempts to pass another vehicle on the other vehicle's right and is struck in the rear by a vehicle traveling within its travel lane in the same direction. The correct code for this vehicle would be Over the lane line or right side of travel lane. However, by modifying the scenario slightly, the lane change may not always be the factor leading to the precrash event. Consider the same situation where this vehicle is passing to the right of the lead vehicle. If an animal runs into the roadway and is struck by this vehicle, then the correct choice would be Animal in roadway.		
22 Off the edge of the road on the left side Used when the initial precrash event occurs beyond the left side shoulder area. This also includes departure into a median.	22	22
23 Off the edge of the road on the right side Used when the initial precrash event occurs beyond the right side shoulder area.	23	23
24 End departure Used when the vehicle departs the end of the roadway (e.g. T-intersection).	24	24
25 Turning left at intersection Used when this vehicle attempts a left turn from its roadway to another roadway or driveway.	25	25
26 Turning right at intersection Used when this vehicle attempts a right turn from its roadway to another roadway or driveway.	26	26
27 Crossing over (passing through) intersection Used when this vehicle's travel as proceeding through the intersection without any planned turning.	27	27
28 This vehicle decelerating Used when the vehicle is decelerating, or has just stopped and is immediately struck.	28	28
29 Unknown travel direction Used for those occasions where this vehicle's travel made the situation critical, but it is unknown which travel direction this vehicle is moving.	29	29
Other Motor Vehicle in Lane		
50 Other vehicle stopped Identifies a situation where the other vehicle is not in motion (i.e., stopped, parked, disabled) and in this vehicle's travel lane. This code should not be used if the other vehicle just stopped and is immediately struck.	50	50
51 Traveling in same direction with lower steady speed Used when the other vehicle is the lead vehicle in the same travel lane, traveling in the same direction, and is traveling slower than this vehicle.	51	51
52 Traveling in same direction while decelerating Used when the other vehicle is the lead vehicle in the same travel lane, traveling in the same direction, and is decelerating.	52	52
53 Traveling in same direction with higher speed	53	53

Form Screen Name: **Critical pre-crash event**

Oracle Variable: PRECRASH.CRITICAL_EVENT　　　　　　　　　2846

	Oracle Value	SAS Value
Element Attributes:		

Used when the speed of the other vehicle is higher than this vehicle or the other vehicle is accelerating. The other vehicle must be overtaking this vehicle.

		Oracle Value	SAS Value
54	Traveling in opposite direction	54	54

Used when the other vehicle is in this vehicle's travel lane and traveling head-on in the opposite direction of this vehicle.

| 55 | In crossover | 55 | 55 |

Used when the other vehicle enters a crossover already occupied by this vehicle. A crossover is defined as a designated opening within a median used primarily for U-turns.

| 56 | Backing | 56 | 56 |

Used when the other vehicle is in the process of backing up while in this vehicle's travel lane.

| 59 | Unknown travel direction of other motor vehicle in lane | 59 | 59 |

Used for situations where the other vehicle's activity (while in the same lane as this vehicle) precipitated the precrash event, but the travel direction and/or speed cannot be determined.

Other Vehicle

| 60 | From adjacent lane (same direction) - over left lane line | 60 | 60 |

Used when the other vehicle is traveling in the same direction as this vehicle and crosses the left lane line with respect to this vehicle's travel lane (i.e. other vehicle crosses its right lane line).

| 61 | From adjacent lane (same direction) - over right lane line | 61 | 61 |

Used when the other vehicle is traveling in the same direction as this vehicle and crosses the right lane line with respect to this vehicle's travel lane (i.e. other vehicle crosses its left lane line).

| 62 | From opposite direction - over left lane line | 62 | 62 |

Used when the other vehicle crosses the left lane line while traveling in the opposite direction from this vehicle (i.e. includes drifts and left turns by other vehicle).

| 63 | From opposite direction - over right lane line | 63 | 63 |

Identifies a situation where the other vehicle crosses the right lane line while traveling in the opposite direction from this vehicle.

| 64 | From parking lane | 64 | 64 |

Used when the other vehicle is departing a parking lane and entering the travel lane of this vehicle.

| 65 | From crossing street, turning into same direction | 65 | 65 |

Used when the other vehicle is turning from another roadway onto this vehicle's roadway and attempts to travel in the same direction as this vehicle.

| 66 | From crossing street, across path | 66 | 66 |

Used when the other vehicle is continuing straight through the intersection and attempts to cross over this vehicle's roadway.

| 67 | From crossing street, turning into opposite direction | 67 | 67 |

Used when the other vehicle is entering an intersection from another roadway and is turning or attempting to turn onto this vehicle's roadway in the opposite travel direction of this vehicle.

| 68 | From crossing street, intended path not known | 68 | 68 |

Form Screen Name:　**Critical pre-crash event**　　　　　　　　　　　　　　　　391

　Oracle Variable:　PRECRASH.CRITICAL_EVENT　　　　　　　　　2846

		Oracle Value	SAS Value
Element Attributes: Used when the other vehicle's entrance into the intersection is the critical factor which leads to the collision, however, the other vehicle's travel direction can not be determined.			
69	From driveway, turning into same direction Used when the other vehicle is turning from a driveway onto this vehicle's roadway and attempts to travel in the same direction as this vehicle.	69	69
70	From driveway, across path Used when the other vehicle is entering this vehicle's roadway from a driveway and is continuing straight across to another driveway or roadway.	70	70
71	From driveway, turning into opposite direction Used when the other vehicle is entering this vehicle's roadway from a driveway and is attempting to turn into the opposite travel direction of this vehicle.	71	71
72	From driveway, intended path not known Used to identify driveway related precrash events where details surrounding the other vehicle's intended path are not known.	72	72
73	From entrance to limited access highway Used for entrance ramp situations where the other vehicle is attempting to enter (merge) onto the limited access highway which is being traveled by this vehicle.	73	73
79	Encroachment by other vehicle - details unknown Used for situations where the other vehicle initiates the critical precrash event, but circumstances surrounding the other vehicle's encroachment are not known.	79	79

Pedestrian, Pedalcyclist

		Oracle Value	SAS Value
80	Pedestrian in roadway Used when a pedestrian is present (e.g. sitting, standing, walking, or running, etc.) in the roadway.	80	80
81	Pedestrian approaching roadway Identifies situations where a pedestrian is within the trafficway and moving toward the roadway or is attempting to enter the roadway, but is not on the roadway.	81	81
82	Pedestrian - unknown location Used when it is determined the presence or action of a pedestrian is the critical factor which leads to this vehicle's collision, but the location or action of the pedestrian is not known.	82	82
83	Pedalcyclist or other nonmotorist in roadway (specify) : Used when a pedalcyclist or other nonmotorist is present in the roadway (irrespective of relative motion).	83	83
84	Pedalcyclist or other nonmotorist approaching roadway (specify) : Identifies situations where the pedalcyclist or other nonmotorist is within the trafficway and moving toward the roadway or attempting to enter the roadway, but is not on the roadway.	84	84
85	Pedalcyclist or other nonmotorist - unknown location (specify) : Used when it is determined the presence or action of a pedalcyclist or other nonmotorist is the critical factor which leads to this vehicle's collision, but the action of the pedalcyclist or other nonmotorist is not known.	85	85

Form Screen Name: **Critical pre-crash event**   392

   Oracle Variable: PRECRASH.CRITICAL_EVENT   2846

		Oracle Value	SAS Value

Element Attributes:
Object or Animal

87	Animal in roadway	87	87

Used when an animal is present (i.e. stationary or moving) in the roadway

88	Animal approaching roadway	88	88

Used in situations where an animal is within the trafficway and moving toward the roadway or attempting to enter the roadway, but is not on the roadway

89	Animal - unknown location	89	89

Used when it is determined the presence or action of an animal is the critical factor which leads to this vehicle's collision, but the action of the animal is not known.

90	Object in roadway	90	90

Used when an object is present in the roadway. An object is defined as being either fixed or nonfixed.

91	Object approaching roadway	91	91

Identifies situations where an object is within the trafficway and moving toward the roadway, but is not on the roadway.

92	Object - unknown location	92	92

Used when it is determined the presence or movement of an object is the critical factor which leads to this vehicle's collision, but details surrounding the location of the object are not known.

Other

93	Other (specify) :	93	93

Used when a critical factor not previously listed resulted in the collision for this vehicle. Previous impacts in the crash are not considered as the other critical precrash events. For example, use this code if the critical event developed from this vehicle's departure from a driveway.

94	Not involved first harmful event	94	94

Used when this vehicle is not involved in the first harmful event in the crash sequence.

8888	No driver present	-8888	8888
9999	Unknown	-9999	9999

Used when the critical precrash event which resulted in the collision is not known. Missing interviews do not automatically result in the use of the "Unknown" code.

   Sources:

            RESEARCHER ASSESSMENT
            REVIEWER ASSESSMENT

Form Screen Name: **Critical reason for critical pre-crash event**

Oracle Variable: PRECRASH.CRITICAL_REASON

2847

Screen Name: Critical reason for critical pre-crash event

Form # - Name: 3 -

SAS Data Set:

SAS Variable:

Remarks:

This variable establishes the critical reason for the occurrence of the critical event. The critical reason is the immediate reason for this event and is often the last failure in the causal chain (i.e., closest in time to the critical precrash event).

Although the critical reason is an important part of the description of crash events, it is not the cause of the crash nor does it imply the assignment of fault. The concept of right-of-way and a number of other causal-related variables are coded in other locations on the Precrash Assessment Form. The primary purpose of the critical reason variable is to enhance the description of crash events and to thus allow analysts to better categorize similar events.

The following general guidelines apply to coding the critical reason for the critical event:
--Generally, one critical reason is assigned per crash (NOTE: exception occurs in simultaneous events such as two vehicles entering an uncontrolled intersection at the same time).
--Coded to vehicle/nonmotorist action/event that makes the collision inevitable.
--Critical reason can be subjective in nature.
--Final selection is based on the preponderance of evidence.

The listing of critical reasons, as provided in this variable covers driver decisions and conditions; vehicle failures; and environmental conditions including weather, roadway condition, and highway design factors. In essence, this listing has been constructed to permit the choice of any of the three primary categories of contributors- vehicle, driver, and environment. Three example scenarios are presented in the material below to demonstrate appropriate coding conventions in the critical reason variable.

Example 1: A car drifts into the opposing lane and collides head-on with a truck.

The car driver was fatigued and had fallen asleep. The critical event is This vehicle traveling over the lane line on the left side of travel lane and the critical reason for the critical event is Sleep, that is, actually asleep.

Example 2: A truck turns left, across the path of an oncoming car at an intersection.

The truck driver had a left turn arrow, observed the on-coming vehicle, and assumed that this vehicle would stop. The two vehicles subsequently collided left front to left front in the intersection. The critical event in this example is the truck's Turn across the path of the on-coming vehicle. For the truck driver, the critical reason is coded as False assumption of other road user's actions.
[NOTE: Timing issues can be very relevant to the scenario described in this example.
Specifically, if the truck driver proceeded further through his intended left turn such that the truck was struck in the side (e.g., rear drive wheels of tractor), then the critical event and critical reason would be coded to the car driver.]

Example 3: A truck fails to slow for traffic ahead. The traffic is stopped for a displayed red signal phase at an intersection. Most of the truck's brakes are out of adjustment and when the driver attempts to stop, the brakes are unable to stop the vehicle in time to avoid a front to rear impact sequence with the vehicle forward of the truck's position.

The Critical event in this example is Other motor vehicle in lane other vehicle stopped. For the truck driver, the Critical reason is coded as Degraded braking capability. It should be noted that Brakes failed is not used in this example because the Brakes failed code is reserved for sudden catastrophic failure. [NOTE: It is recognized that timing issues and driver awareness issues can play a role in this scenario. For example, if the driver was attentive, was unaware of the vehicle's degraded braking capability, and had intended to complete a "normal" stop, then the Non-disabling vehicle problem or This vehicle decelerating elements may be more appropriate selections for the truck's critical precrash event designation.]

The primary intent of the critical reason variable is to provide more detail about what happened in the crash

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sequence. For example, in the case (example 2) where the truck driver exercised his right-of-way and turned left in front of approaching traffic, the critical reason False assumption indicates that the driver saw the on-coming traffic, but did not verify that the approaching vehicle was going to stop. The critical event is determined independent of the legal system and in this case is the left turn initiated by the truck driver. The Critical reason provides the explanation for the turn. In this case, the Critical reason is that the turning driver thought that the approaching vehicle was going to stop (a false assumption)

Specific critical reason elements within the driver related, vehicle related, and environment related factor groups are defined as follows:

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Critical reason not coded to this vehicle Used when the critical reason is coded to the other vehicle or nonmotorist involved in the crash sequence.	1	1
Driver Related Factor **Critical non-performance**		
100 Sleeping, that is, actually asleep Used in situations where the driver is asleep and no longer consciously in control of the vehicle. The element is not used when the driver's judgment, reactions, or perception are impaired as a result of fatigue.	100	100
101 Heart attack or other physical impairment of the ability to act Used when the driver is incapacitated due to some form of physical impairment such as a heart attack, seizure, fainting, blackout, etc. Use of this element implies that the driver relinquished steering control.	101	101
102 Other critical non-performance (specify) : Used to indicate other major forms of non-performance. A driver who passes out as a result of alcohol or drug ingestion is classified using this element along with an annotation specifying the specific source of the non-performance.	102	102
109 Unknown critical non-performance Used when scene evidence, other driver statements, or witness statements indicate that this driver was not functioning, but the specific reason for the non-performance cannot be determined.	109	109
Recognition Error		
110 Inattention (i.e., daydreaming) Used when the driver fails to recognize a situation that demands a response because his/her attention has wandered from the driving task for some non-compelling reason. In this circumstance, the driver is typically focusing on internal thoughts (i.e., daydreaming, problem solving, worrying about family problem, etc.) and not focusing attention on the driving task.	110	110
111 Internal distraction	111	111

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		Oracle Value	**SAS Value**
Element Attributes:			
	Reserved for crashes in which the driver fails to recognize a situation requiring a response because his/her attention is directed to some event, object, person, or activity inside the vehicle. Relevant examples include tuning the radio, adjusting the heat/cooling system, engaging in a conversation with a passenger, using a cell phone, retrieving fallen objects, reading books/magazines/maps/invoices, etc.		
112	External distraction	112	112
	Reserved for crashes in which the driver fails to recognize a situation requiring a response because his/her attention is directed to some event, object, person, or activity outside the vehicle. Relevant examples include searching for a street address, construction activity, looking at a building or scenery, looking at a sign, looking at a previous crash site, etc. Distractions are distinguished from inattention in that distractions induce the driver to focus attention on the distraction. This category takes precedence over the next category (Inadequate surveillance). If, for example, a driver fails to look because he/she is distracted, code external or internal distraction as appropriate.		
113	Inadequate surveillance (e.g., failed to look, looked but did not see)	113	113
	Used when the driver is in a situation where he/she is required to look to safely complete a maneuver and either fails to look in the appropriate place or looks, but does not see. Examples include lane changes and turns at intersection where the driver looks in the required directions, but fails to recognize approaching traffic. Inattention, internal distraction, and external distraction all take precedence over this category. Use the inattention/distraction categories if the driver is not attentive to the driving task for any of these reasons. If, however, the driver is paying attention to the driving task and is in a situation which requires surveillance of surrounding traffic and the driver fails to do so, the "inadequate surveillance" category should be used. Additionally, if the vehicle is equipped with ABS and the driver brakes but fails to attempt a steering maneuver to avoid impact, this code is inappropriate.		
114	Other recognition error (specify) :	114	114
	Used when there is a delay in recognition or a failure to recognize that is not described in preceding categories.		
119	Unknown recognition error	119	119
	Used when it can be established that the driver failed to perceive or comprehend the surrounding situation/circumstances, but the precise reason cannot be established.		
Decision Errors			
120	Too fast for conditions (specify) :	120	120

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		Oracle Value	SAS Value

Element Attributes:

Used when the subject vehicle is proceeding at a speed that is greater than a reasonable standard of safe driving. Whether a vehicle's speed is excessive is a subjective evaluation, though there are scenarios where most analysts would agree. For example, a driver who is driving much faster than the rest of the traffic stream would probably be coded here, as would a driver who fails to slow down when encountering snowy or slippery conditions. On the other hand, if the driver clearly slows for a slick road condition and is making an attempt to negotiate the road safely, but still loses control due to the slippery condition, choose the "Slick Roads" attribute. (NOTE: There is a tendency to overuse this element which can be traced to the inherent subjectivity associated with this element. To determine if the speed is excessive, compare the estimated value to a reasonable standard of safe driving. If there is evidence that the driver was attempting to proceed at a safe speed but failed, consider whether other element values might be more appropriate. For example, if a truck driver is negotiating an exit ramp at a speed well under the posted limit, but the truck rolls over, the Signs/signals inadequate attribute or the Road design - road geometry attribute might be more appropriate.)

121	Too fast to be able to respond to unexpected actions of others (specify) :	121	121

Used when the subject vehicle is proceeding at a speed that is greater than a reasonable standard of safe driving. In addition to the speed factor, a second vehicle (either a contact or non-contact vehicle) initiates an action to which the driver cannot successfully respond due to excessive speed. An example would be a situation in which a driver is following another vehicle on a wet roadway and the lead vehicle suddenly brakes in order to make a turn and the following vehicle cannot come to a controlled stop behind it (e.g. the following vehicle skids off the road).

122	Too fast for curve/turn	122	122

Used when the driver is negotiating a curve in the road or executing a turn at a speed that is greater than prudent - consequences might include a rollover event or some other loss of control. In this situation, the driver is usually attempting to negotiate the curve at a speed greater than the posted speed limit for the curve.

123	Too slow for traffic stream	123	123

Used when the subject vehicle is traveling at a speed which impedes traffic flow. On interstate roadways, the estimated travel speed should be less than the minimum speed limit for that roadway system. For other roadway types, the travel speed in question should be at least 10 mph (16.1 kph.) below the posted speed limit.

124	Misjudgment of gap or other's speed	124	124

Used in situations where a driver misjudges the length of a gap or the speed of an on-coming vehicle and pulls out or turns inappropriately. An example is a driver making a left turn who misjudges the gap in approaching (head-on) traffic and executes the turn at the wrong time. Another example is a driver turning right from a driveway onto a road. This driver misjudges the speed of traffic approaching from his left and pulls out into the path of this traffic

125	Following too closely to respond to unexpected actions	125	125

Used for situations in which one vehicle is following another vehicle so closely that even if the following driver is attentive to the actions of the vehicle ahead, he/she could not avoid a collision in the circumstance when the lead driver brakes suddenly.

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	Oracle Value	**SAS Value**
Element Attributes:		

126   False assumption of other's actions   126   126
Used when a driver takes an action or fails to act based on an assumption of
another driver's behavior which proves to be false. A typical example would
be a left turn with the right-of-way where the turning driver assumes the on-
coming vehicle will yield the right-of-way. Another example is a driver waiting
to pull out into traffic who sees an approaching vehicle that is signaling to turn.
The driver assumes the approaching vehicle will turn before reaching the
vehicle's position and pulls out. The signaling vehicle, however, does not turn
and collides with the vehicle pulling out. A final example for this element is
the case in which one vehicle stops to allow another vehicle to pull out from a
driveway and proceed across the stopped vehicle's path. The driver pulling
out assumes that there is no moving traffic in lanes beyond the stopped
vehicle and is subsequently struck by through traffic in these lanes (e.g., good
Samaritan crash scenario).

127   Illegal maneuver   127   127
Used for maneuvers that are illegal and clearly unsafe. Examples include
turning from the wrong lane, going straight in a turn lane, going the wrong way
on a one-way street, and passing at an unsafe or improper location.

128   Failure to turn on headlamps   128   128
Applies to the situation where a driver fails to turn on the vehicle's headlights
during periods of reduced visibility and is unable to see properly. Examples
include the circumstance where a driver is proceeding down a dark roadway
at night without headlights and fails to see a pedestrian crossing the vehicle's
path. Periods when headlights should be activated include inclement weather
(e.g., rain, snow, sleet, and fog).

129   Inadequate evasive action, e.g. braking only, not braking and steering   129   129
Used in situations when the collision could have been avoided if the driver
executes a reasonable evasive maneuver but fails to do so. For example, if a
collision can be avoided by braking and steering, but the driver only brakes,
this element is the appropriate code. Use this element if the driver fails to
initiate sufficient action(s) to avoid the crash.

130   Incorrect evasive action   130   130
Used when the driver initiates an evasive action, but it is the incorrect choice.
For example, a driver who reacts to a situation in front of him by steering off
the roadway rather than braking when braking alone would have been a
successful avoidance maneuver.

131   Aggressive driving behavior   131   131
Applies to specific patterns of behavior that include speeding, tailgating,
weaving, red-light running, and abrupt speed changes. Patterns of behavior
directed at other motorists such as gestures (including obscene), flashing
lights, horn honking, and deliberately obstructing the path of others are
particularly relevant. If the driver engages in these activities and the
immediate action that results in the critical event does not fit into any of the
other listed categories, use of this element is appropriate.

132   Other decision error (specify) :   132   132
Used for decision errors that are not described in preceding categories. An
annotation which specifies the decision error type is required.

139   Unknown decision error   139   139

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	Oracle Value	SAS Value

Element Attributes:
Used when it is evident that a decision error has been committed, however, there is insufficient information to determine the precise nature of the error. Use of this code often reflects the lack of detailed interview data.

Performance Errors

		Oracle Value	SAS Value
141	Panic/freezing	141	141

Used in situations in which a collision might be avoided if the driver does not either panic or freeze. Panic refers to irrational and impulsive actions that obviously do not assist the effort of crash avoidance (e.g., driver taking hands off steering wheel and screaming). Freezing refers to drivers who cannot move or cannot think of an evasive maneuver and, therefore, do nothing.

		Oracle Value	SAS Value
142	Overcompensation	142	142

Used in situations in which a driver overreacts to a situation requiring some adjustment in the velocity or path of the subject vehicle. A typical example is a driver running partly off the road to the right and overcorrecting to the left into on-coming traffic.

		Oracle Value	SAS Value
143	Poor directional control (e.g., failing to control vehicle with skill ordinarily	143	143

Applies to situations in which the driver fails to maintain the degree of vehicle control ordinarily expected of a good driver. It is not intended for situations when a high degree of skill is required. This element is probably most applicable to unskilled, novice drivers or older drivers with degraded skills. In situations where there is evidence that the driver is not maintaining control as a result of inattention or distraction, those codes should be used.

		Oracle Value	SAS Value
144	Other performance error (specify):	144	144

Used for errors in vehicle control that are not described in preceding elements of this category. An annotation is required to specify the performance error type.

		Oracle Value	SAS Value
149	Unknown performance error	149	149

Used when it is evident that a performance error has been committed, but the precise nature of the error cannot be determined.

Unknown Driver Error

		Oracle Value	SAS Value
199	Type of driver error unknowr	199	199

Used when there is evidence that a driver-related factor is the critical reason, but the nature of the driver factor cannot be more precisely determined. For example, if it cannot be determined if the driver looked but failed to see (recognition error) or misjudged a gap (decision error), then Type of driver error unknown is the appropriate element selection. (NOTE: This circumstance occurs most frequently when there is a lack of detailed interview data.)

Vehicle Related Factor
Vehicle Related Factor

		Oracle Value	SAS Value
200	Brakes failed	200	200

Used if the vehicle's brakes suddenly fail. If the brakes are still functional, but out of adjustment and failed to stop the vehicle in time to avoid the collision, use Degraded braking capability code.

		Oracle Value	SAS Value
201	Degraded braking capability	201	201

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		Oracle Value	SAS Value
Element Attributes:			

Used when the vehicle's brakes are degraded to such an extent that the driver could not stop the vehicle in time; however, there was NOT a catastrophic brake failure. This should be used ONLY when there is sufficient evidence to support this claim (i.e. excessive stopping distance, no skidmarks in non-ABS vehicle, etc.).

202 Tires/wheels failed — Oracle Value 202, SAS Value 202

Used when there are catastrophic failures such as blowouts, tread separations, and wheel separations. If the reason for the tire/wheel failure was due to a pothole then Maintenance problems (potholes, deteriorated road edges, etc.) is more appropriate. Bald and/or under-inflated tires are not considered catastrophic failures. These conditions would be coded as Other tire degradation and specify the condition on the GV form.

204 Steering failed — Oracle Value 204, SAS Value 204

Used when there is a sudden loss of steering associated with component failure in the steering system.

205 Suspension failed — Oracle Value 205, SAS Value 205

Used when a failure occurs in the suspension system. This failure must be traced to a subsequent loss of control or other collision related event (i.e., jackknife, rollover, etc.).

206 Transmission/engine failure — Oracle Value 206, SAS Value 206

Used when the vehicle's engine or transmission failed such that the vehicle lost power and the driver could not control the vehicle.

207 Lights failed — Oracle Value 207, SAS Value 207

Used when there is a sudden failure of the lighting system which subsequently leads to crash involvement.

208 Vehicle related vision obstructions — Oracle Value 208, SAS Value 208

Used when the driver's field of view is obstructed by improperly loaded cargo or unusual vehicle modifications. This element is not intended to capture the driver's inability to see traffic in the "blind spots" around the vehicle.

209 Body, doors, hood failed — Oracle Value 209, SAS Value 209

Used when vehicle components fail and lead to subsequent crash involvement. An example is a hood flying up, obstructing the driver's vision, and resulting in a subsequent loss of control.

210 Cargo shifted — Oracle Value 210, SAS Value 210

Used when it can be established that cargo shift was the precursor to the critical event rather than one of the effects of the event. It should be noted that drivers are typically unaware whether cargo shift caused a rollover or was the consequence of a rollover. Therefore, the specific roll of cargo shift will have to be determined from other sources such as vehicle inspection results or witness reports. It is expected that cargo shift as a critical reason will often be associated with tie down failure or improper loading. For example, a pickup truck heavily loaded with hay bales, loosely tied, enters a curve to the right at a reasonable speed. Witnesses reported that the cargo was swaying before the truck entered the curve. The pickup truck rolls over. Tie down for the load was inadequate. In this case, Cargo may be appropriate. However, if the truck had a trailer loaded with hay and the pickup was observed entering the curve at a high rate of speed, the driver may report cargo shift, but the cargo shift in this case is more likely the result of the rollover than the cause of the rollover.

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Element Attributes:	Oracle Value	SAS Value

211   Trailer attachment failed   211   211
 Used when trailer attachments (e.g., hitches) fail and there is either a
 separation of units or a loss of control.

212   Jackknifed   212   212
 Used when there is a sudden unexplained jackknife which precipitates crash
 involvement. Generally, jackknife will be the result of some previous vehicle
 control action. For example, a driver brakes heavily on wet pavement and as
 a result, the vehicle combination jackknifes. In these cases, the critical
 reason would be whatever leads to the braking and the critical event would be
 loss-of-control due to jackknife. An example where this element is
 appropriate as the critical reason is as follows. A tractor-semi trailer is
 proceeding along a snow covered Interstate roadway in the right lane. A
 passenger car begins to pass the combination in the left lane. As the car
 moves alongside the tractor-semi trailer, the combination begins to jackknife,
 precipitating the crash. The truck driver does not appear to have initiated any
 action which could have caused the jackknife (i.e., no braking/steering inputs).
 In this circumstance, element Jackknifed is an appropriate selection.

213   Other vehice failure (specify) :   213   213
 Used in cases of vehicle failure where the specific failure is not described in
 preceding elements. It is also used in circumstances where the vehicle does
 not meet legal requirements for repair, but if the repairs had been completed,
 the driver would have been able to avoid the collision. An annotation is
 required to indicate the nature of the vehicle problem.

299   Unknown vehicle failures   299   299
 Used when it is clear that a vehicle failure of some type produced the crtical
 event, but the nature of the failure cannot be determined.

203   Other tire degradation   203   203
 Used when some condition of the tires is present and compromises the
 driver's ability to control the vehicle with the skill normally expected. This
 code should be used to document tire conditions that may degrade the
 vehicle's handling characteristics (e.g. low tire pressure, or insufficient tread
 depth). This should be used ONLY when there is sufficient evidence to
 support this claim. This variable should not be used for catastrophic tire
 failures such as blowout, tread separations, or rapid losses of air. In those
 cases, use Tires/wheels failed.

Environment Related
Highway Related

500   Signs/signals missing   500   500
 Used when signs/signals are called for, but either have been removed or not
 yet installed. Signs/signals removed as a result of theft/vandalism are
 included in this element.

501   Signs/signals erroneous/defective   501   501
 Used when signs or signals are erroneous/defective and a functioning driver
 is misled by the signs, precipitating the critical event. Specifically, if the
 signs/signals had been correct or functioning properly, the driver would have
 the information needed to avoid the collision.

502   Signs/signals inadequate   502   502

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		Oracle Value	**SAS Value**

Element Attributes:
Used in situations where sign/signals do not provide sufficient information to a conscious and conscientious driver. For example, signs in or preceding a construction zone where traffic flow is modified may not provide enough information about traffic flow changes such that even an attempt to operate safely may not be enough to avoid a collision. Signs on ramps tend to be a second example. Posted speeds on entrance/exit ramps generally indicate safe speeds for automobiles.

503	View obstructed by roadway design/furniture	503	503

Used for permanent roadside features such as billboards, signal supports, guardrails, or other similar objects block the vision of a driver to the extent that he/she is unable to see sufficiently to operate safely.

504	View obstructed by other vehicles	504	504

Used if the driver's view is blocked by legally parked vehicles, the driver proceeds cautiously, but is still unable to avoid the collision as a direct result of his/her obstructed view.

505	Road design - roadway geometry (e.g., ramp curvature)	505	505

Used for roadway designs that deviate from AASHTO standards, where the design deficiency results in a collision, even though the driver is adhering to a reasonable standard of safe driving. If the road design conforms to AASHTO standards, but the signage is inadequate, use element Signs/signals inadequate.

506	Road design - sight distance	506	506

Used when the road design does not meet AASHTO standards with respect to sight distance requirements. An example of this circumstance is a roadway which does not meet the AASHTO standard for sight distance within a marked passing zone. A second example might be the placement of an intersection with respect to a bridge structure such that a driver at an intersection cannot see for enough down the cross street to determine if it is safe to proceed (i.e., driver's view is obstructed by the bridge structure).

507	Road design - other	507	507

Used for all other roadway design problems that produce the critical event and that are not described in either of the two preceding elements.

508	Maintenance problems (potholes, etc.)	508	508

Used when road defects are the immediate cause of a loss of control event. For example, a blowout due to striking a pothole that results in a subsequent loss of control is coded using this element. Similarly, a loss of control that is directly attributable to a deteriorated road is also coded using this element.

509	Slick roads (low friction road surface due to ice, loose debris, any other cause)	509	509

Used when a driver, operating in accordance with a reasonable standard of safe driving hits a patch of "black ice" and loses control. Similarly, if a driver knows that the road is slick and is attempting to proceed with due caution, but loses control or is unable to stop or slow safely, this element is also an appropriate selection.

510	Other highway-related condition (specify):	510	510

Used for all other highway-related conditions that are not described in preceding elements. An annotation is required to specify the relevant condition.

Weather Related

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	Oracle Value	SAS Value
Element Attributes:		
520 Rain, snow	520	520

    Used in cases involving sudden/heavy rainfalls or "white-outs" during snow storms when the precipitation obstructs the driver's view. If, however, it has been raining or snowing for a period of time and the driver does not conform to the changed conditions (i.e., operates at an unreasonable speed for the given conditions), then element attribute Too fast for conditions might be a more appropriate selection as the critical reason.

	Oracle Value	SAS Value
521 Fog	521	521

    Used when a driver suddenly encounters fog and cannot slow down in time to operate safely. If, however, the driver is out-driving his line of sight for a period of time, then element Too fast for conditions is a more appropriate selection as the critical reason.

	Oracle Value	SAS Value
522 Wind gust	522	522

    Used when a wind gust causes a driver to lose control or causes the driver to swerve from his/her intended path.

	Oracle Value	SAS Value
523 Other weather-related condition (specify) :	523	523

    Used for all other weather-related conditions that produce a critical event. An annotation is required to specify the weather condition.

	Oracle Value	SAS Value
525 Glare	525	525

    Used for both sunlight and headlight glare which obstructs the driver's vision. Use of this code implies that the glare is sudden and the driver does not have time to adjust. An example is a driver executing a left turn who is prevented by sun glare from detecting approaching traffic.

	Oracle Value	SAS Value
526 Blowing debris	526	526

    Used when blowing debris either obstructs the driver's view or causes the driver to swerve the vehicle to avoid the debris.

	Oracle Value	SAS Value
527 Other sudden ambience change (specify):	527	527

    Used for all other sudden changes in the driving environment that produce or lead to a critical event.

	Oracle Value	SAS Value
8888 No driver present	-8888	8888
9999 Unknown reason for critical event	9999	9999

    Used when there is insufficient information to determine a reason for the critical event.
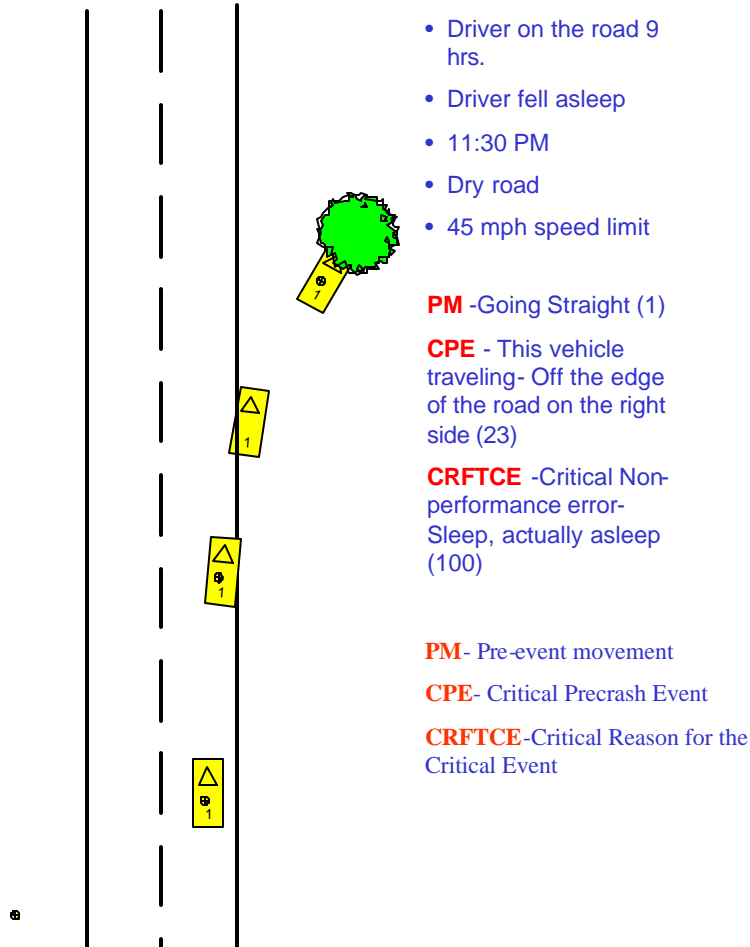
 Sources:
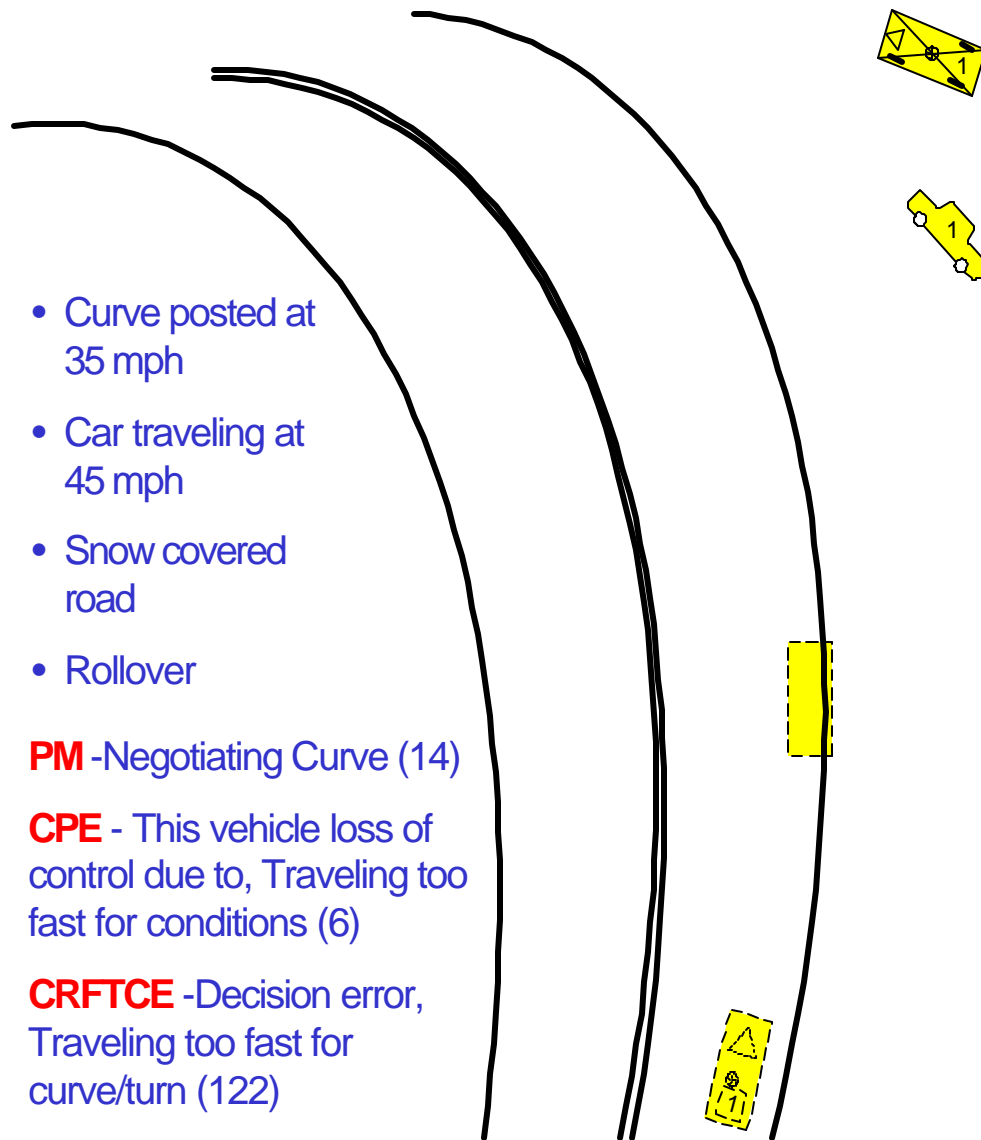
      RESEARCHER ASSESSMENT
      REVIEWER ASSESSMENT

Example Scenarios Demonstrating Coding Sequences
For PAF Variables 1-3

A total of __ example scenarios are presented in the following materials. The scenarios demonstrate proper code sequences for variables 1-3 in a range of crash circumstances. These examples will provide researchers a correct set of basic sequences that can be modified to code real world crash sequences.
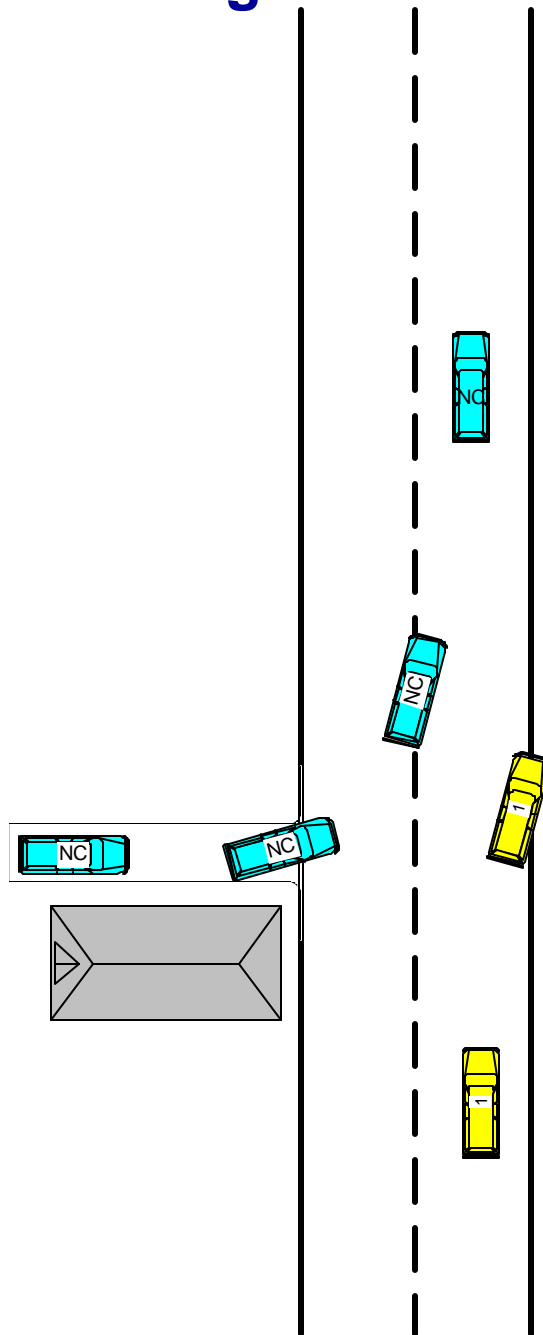
1-Single Vehicle
Run-off-road

- Driver on the road 9 hrs.
- Driver fell asleep
- 11:30 PM
- Dry road
- 45 mph speed limit

PM -Going Straight (1)

CPE - This vehicle traveling- Off the edge of the road on the right side (23)

CRFTCE -Critical Non-performance error- Sleep, actually asleep (100)

PM- Pre-event movement

CPE- Critical Precrash Event

CRFTCE-Critical Reason for the Critical Event

06/01/2005

2-Single Vehicle Run-off-road Rollover

- Curve posted at 35 mph
- Car traveling at 45 mph
- Snow covered road
- Rollover

PM -Negotiating Curve (14)

CPE - This vehicle loss of control due to, Traveling too fast for conditions (6)

CRFTCE -Decision error, Traveling too fast for curve/turn (122)

06/01/2005

3-Single Vehicle Run-off-road Avoiding Vehicle

PM -Successful avoidance maneuver to a previous critical event (17)
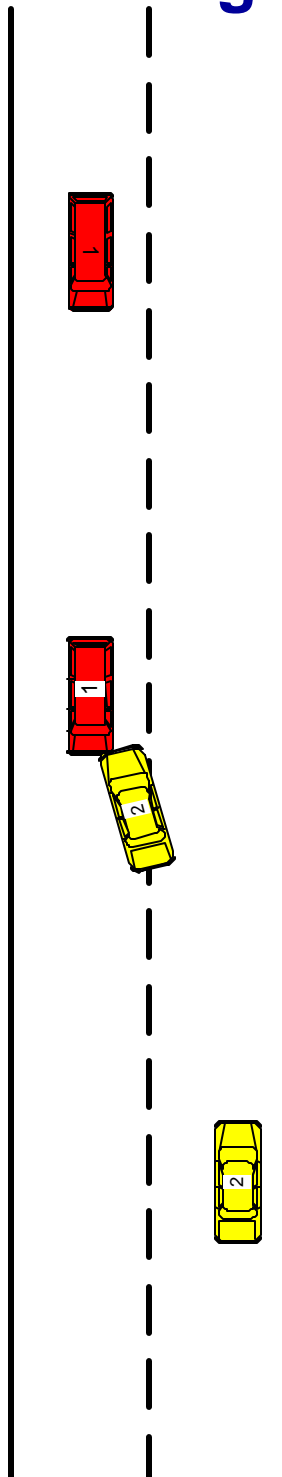
CPE -Off the edge of the road on the right side (23)

CRFTCE -View obstructed by roadway design/furniture (503)

- 45 mph speed limit

- 40 mph V1 (truck) travel speed

- Vision of non contact (NC) vehicle blocked by building

NC

NC

NC

NC

06/01/2005

4-Lane Change Avoiding Animal

- Animal approaches roadway

- V2 driver drowsy

- V2 driver steers to left

- V2 strikes V1 in opposite travel lane

V1

PM -Going Straight (1)

CPE -Other MV encroaching into lane, From opposite direction-over left lane line (62)

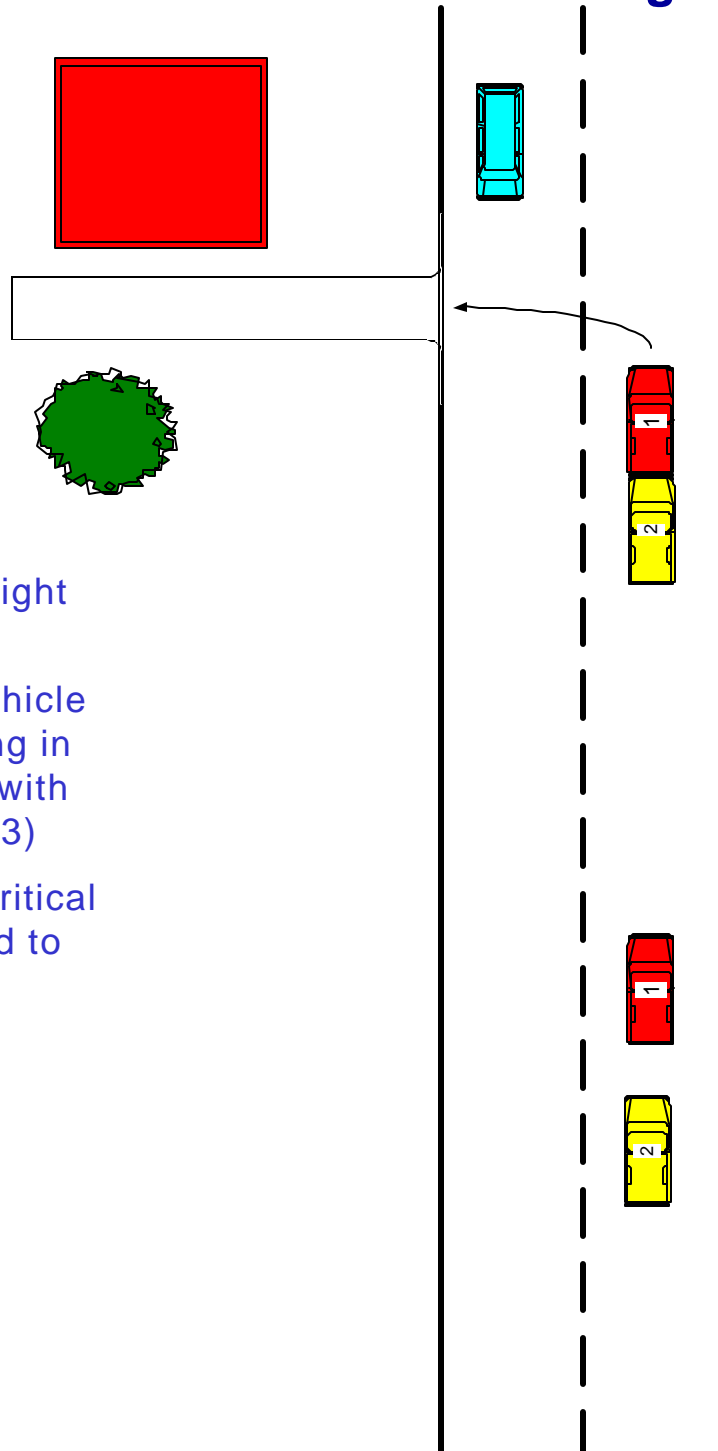**CRFTCE** -No critical reason assigned to this vehicle (1)

V2

PM -Going Straight (1)

CPE -Animal approaching roadway (88)

CRFTCE - Inattention (110)

06/01/2005

5-Front to Rear
Lead Vehicle Turning

- Lead vehicle (V1) stops for on-coming traffic to pass

- V1 Intends to turn left into driveway

- Truck driver (V2) looking out window to right

- Travel speed 35 mph

V1

PM –Going straight (1)

CPE – Other vehicle in lane, Traveling in same direction with higher speed (53)

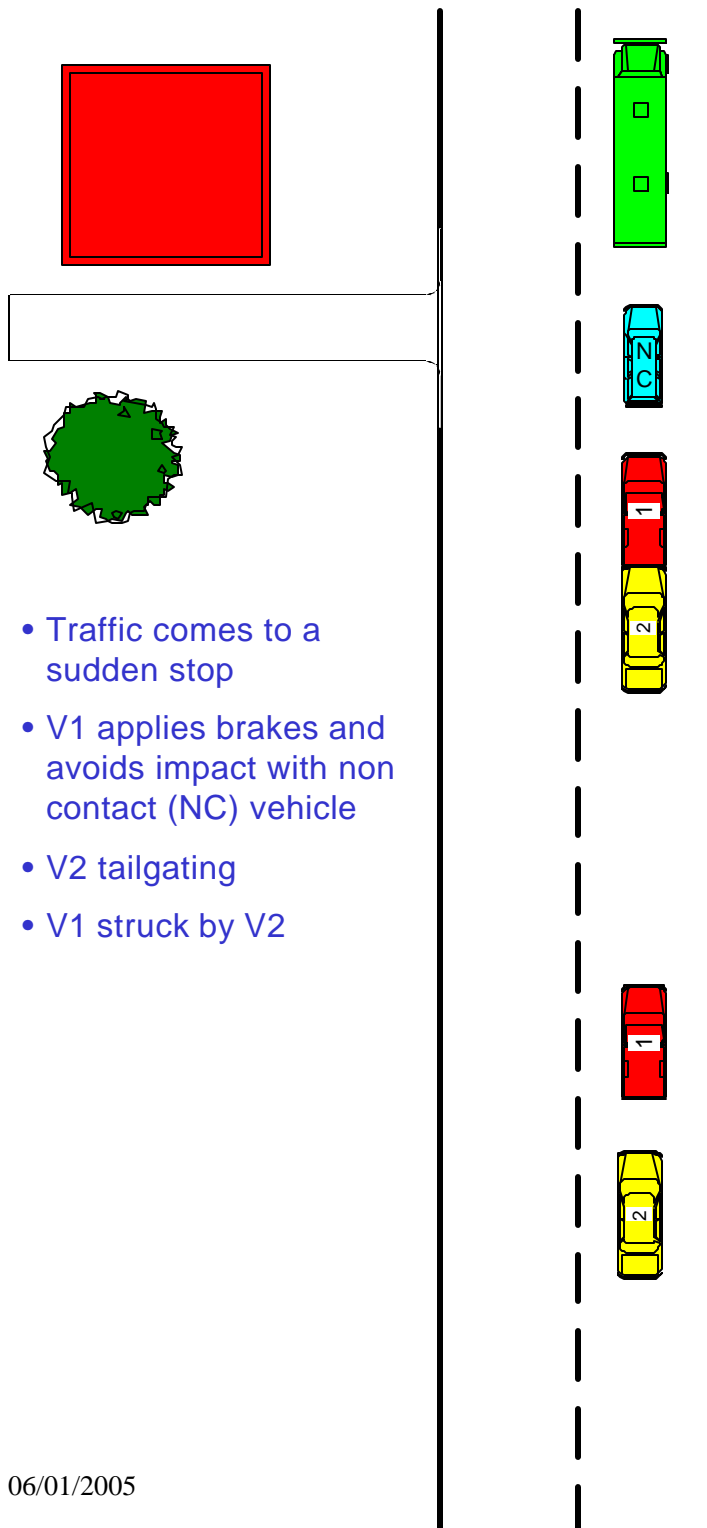**CRFTCE –**No critical reason assigned to this vehicle (1)

V2

PM –Going straight (1)

CPE –Other vehicle in lane, Other vehicle stopped (50)

CRFTCE – Recognition error, External distraction (112)

06/01/2005

6-Front to Rear
Lead Vehicle Stops

V1

PM -Successful avoidance maneuver (17)

CPE -This vehicle decelerating (28)

CRFTCE -No critical reason assigned to this vehicle (1)

V2

PM -Going Straight (1)

CPE -Other vehicle in lane , traveling in same direction while decelerating (52)

CRFTCE - Following too close to respond to unexpected actions of other road users (125)

- Traffic comes to a sudden stop
- V1 applies brakes and avoids impact with non contact (NC) vehicle
- V2 tailgating
- V1 struck by V2

06/01/2005

7-Lane Change Passing Traffic

- Slow moving traffic

- V2 begins to pass

- Does not immediately notice V1

- Uphill slope of 2%

V2

PM –Going straight (1)

CPE –This vehicle traveling- Over the lane line on left side of the travel lane (20)
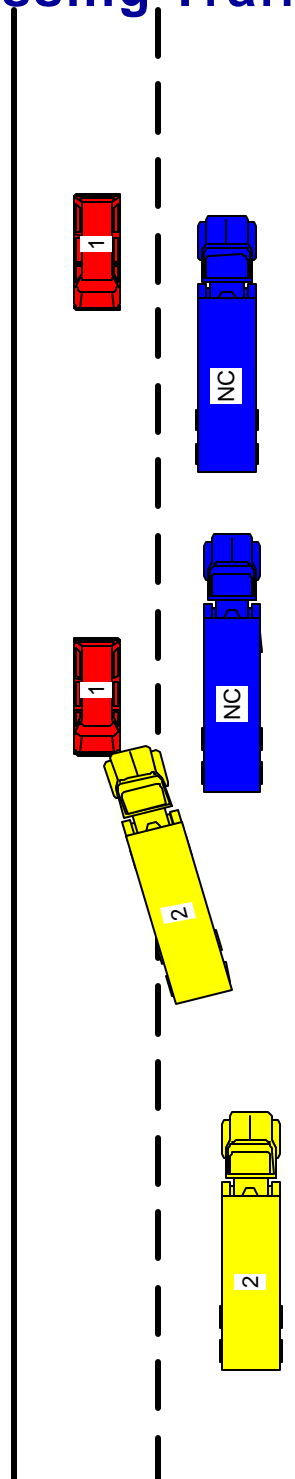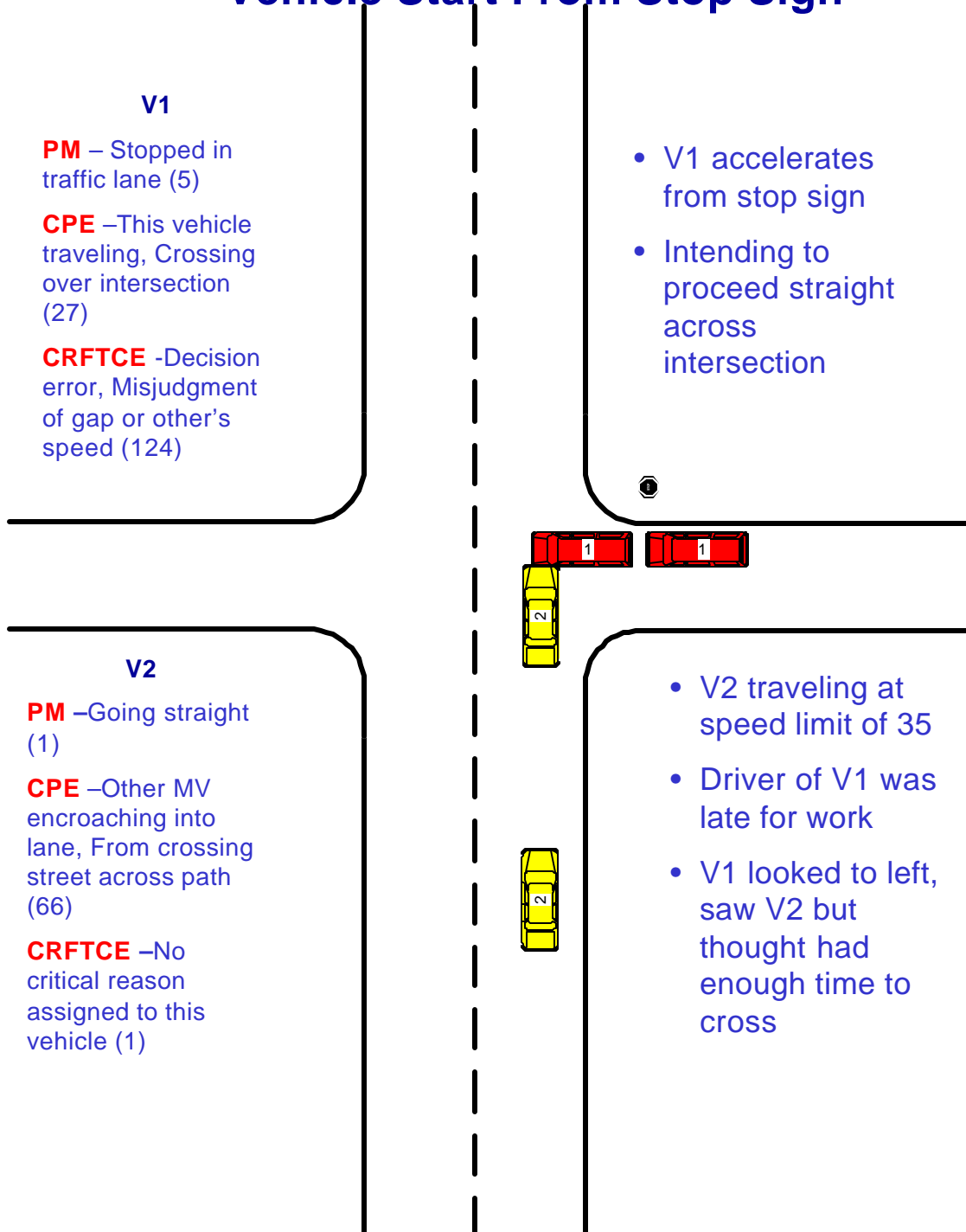
CRFTCE –Recognition error, Inadequate surveillance (113)
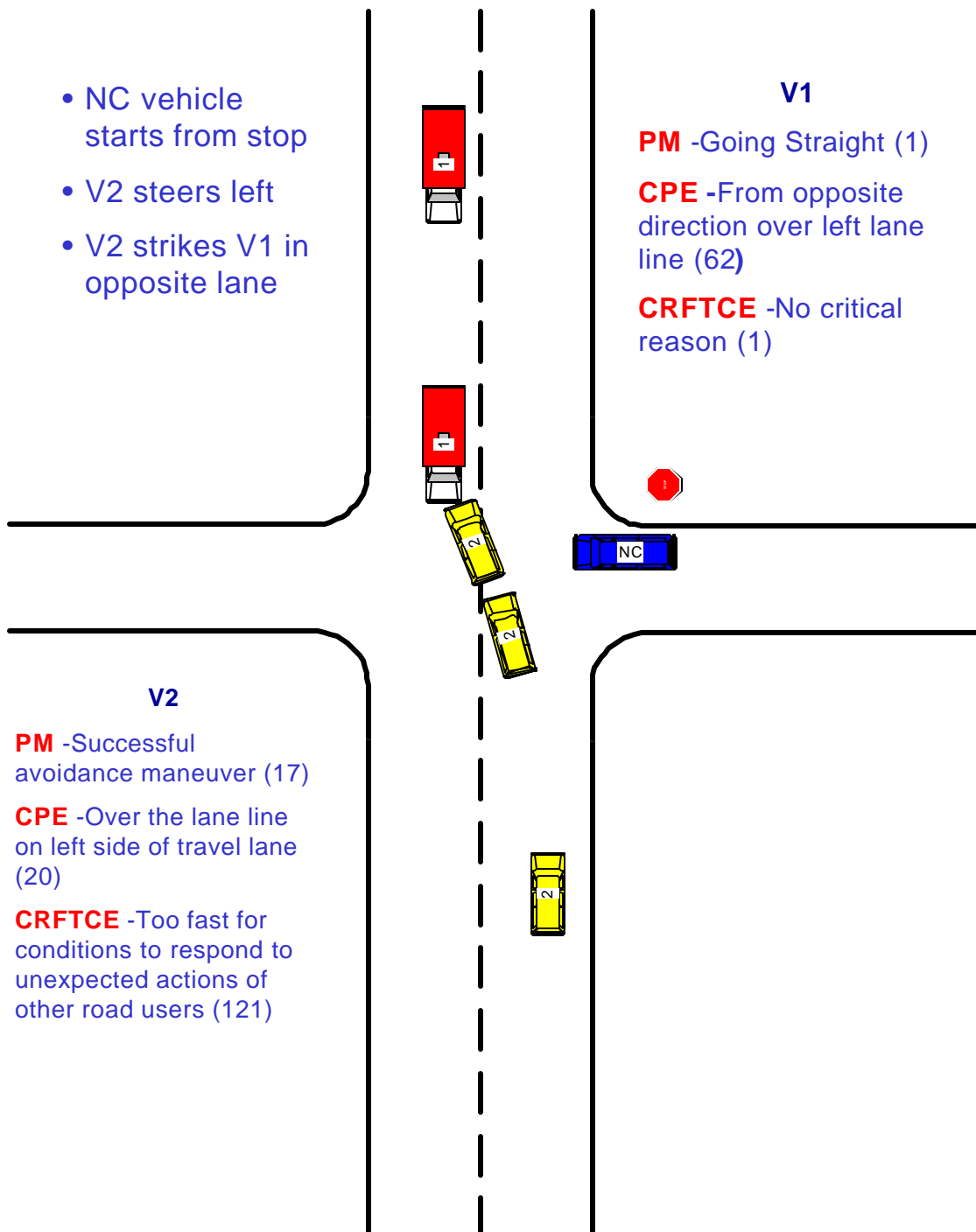
V1

PM –Going straight (1)

CPE –Other MV encroaching into lane, From opposite direction-over left lane line (62)

CRFTCE –No critical reason assigned to this vehicle (1)

06/01/2005

8-Intersection
Vehicle Start From Stop Sign

V1

PM – Stopped in traffic lane (5)

CPE –This vehicle traveling, Crossing over intersection (27)

CRFTCE -Decision error, Misjudgment of gap or other's speed (124)

- V1 accelerates from stop sign

- Intending to proceed straight across intersection

V2

PM –Going straight (1)

CPE –Other MV encroaching into lane, From crossing street across path (66)

CRFTCE –No critical reason assigned to this vehicle (1)

- V2 traveling at speed limit of 35

- Driver of V1 was late for work

- V1 looked to left, saw V2 but thought had enough time to cross

06/01/2005

9-Lane Change
Avoids Vehicle

- NC vehicle starts from stop
- V2 steers left
- V2 strikes V1 in opposite lane

V1

PM -Going Straight (1)

CPE -From opposite direction over left lane line (62**)**

CRFTCE -No critical reason (1)

V2

PM -Successful avoidance maneuver (17)

CPE -Over the lane line on left side of travel lane (20)

CRFTCE -Too fast for conditions to respond to unexpected actions of other road users (121)

06/01/2005

10-Intersection
Turn Across Path, Traffic Light

V1

PM – Stopped in traffic lane (5)

CPE –This vehicle traveling, Turning left at intersection (25)

CRFTCE –Decision error, False assumption of other road user's actions (126)

- Traffic light just turned to red for V2

- V2 traveling at 45 mph

- V1 stopped has green left turn arrow

V2

PM –Going straight (1)

CPE –Other MV encroaching into lane, From opposite direction-over left lane line (62)

CRFTCE –No critical reason assigned to this vehicle (1)

- Speed limit 45 mph

06/01/2005

Form Screen Name: **Attempted avoidance maneuvers**   413

Oracle Variable: AVOIDANCE.AVOID_MANEUVER   2010

Screen Name: Attempted avoidance maneuvers

Form # - Name: 4 - What avoidance actions did you take, if any?

SAS Data Set:

SAS Variable:

Remarks:

Attempted avoidance maneuvers are movements/actions initiated by the subject driver within the critical crash envelope in response to a Critical precrash event. Attempted avoidance maneuvers occur after the driver realizes an impending danger. This variable documents the driver's actions initiated in response to the realization of impending danger.

Select the element value which best describes the actions taken by the driver in response to the Critical precrash event. When there is a known action (e.g. braking), but it cannot be determined if there is more than one action (e.g. braking and steering left), default to the known action (e.g. braking). If it is determined that there was more than one action, and there is an attribute which captures that, code that attribute. If there is no attribute that captures both actions, code all that apply.

Range:

Choose as many as apply

Method: Fill all that apply

Element Attributes:	**Oracle Value**	**SAS Value**
1 None Used when the driver does not attempt to initiate any pre-impact evasive maneuver.	1	1
2 Full ABS application Used when driver applies the brake pedal fully and feels the pulsing of the ABS system. If the scene evidence does not show intermittent skidmarks and/or driver cannot verify the pulsing sensation from the brake pedal, this code should not be used.	2	2
3 Braking without lock-up	3	3
4 Braking with lock-up	4	4
5 Braking (lock-up unknown) Used when it can be determined that the driver braked, but there is insufficient information to determine if lockup occurred.	5	5
6 Releasing brakes Used when the driver is braking prior to the critical event, but reduces brake pedal pressure in response to the critical event.	6	6
7 Steering left Used when the driver steers left in response to the crtical event (i.e. avoidance maneuver in response to perceived danger).	7	7
8 Steering right Used when the driver steers right in response to the critical event (i.e. avoidance maneuver in response to perceived danger).	8	8
9 Accelerating Used when the driver accelerates in response to the critical event.	9	9
10 Other (specify) :	10	10

Form Screen Name: Attempted avoidance maneuvers   414

  Oracle Variable: AVOIDANCE.AVOID_MANEUVER

		Oracle **Value**	**SAS** **Value**
Element Attributes:			
	Used when the driver initiates an avoidance maneuver that is not described in preceding categories. Multiple maneuvers and unusual combinations of actions are coded here. An annotation is required to describe the attempted avoidance maneuver/action.		
8888	No driver present	-8888	8888
9997	Not applicable	-9997	9997
9999	Unknown		
	Used when there is insufficient information to determine if the driver initiates an avoidance maneuver/action in response to the critical event.	-9999	9999

  Sources:

        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name: **Pre-impact stability of vehicle**   415

Oracle Variable: PRECRASH.STABLITY   1381

Screen Name: Pre-impact stability of vehicle

Form # - Name: 5 -

SAS Data Set:

SAS Variable:

Remarks:

The purpose of this variable is to assess the stability of the vehicle after the critical event. The stability of the vehicle prior to an avoidance action is not considered except in the following situation: A vehicle that is out of control (e.g., yawing clockwise) prior to an avoidance maneuver is coded Other control loss (specify) only if an avoidance action was taken in response to an impending danger. Thus, this variable focuses upon this vehicle's dynamics after the critical event.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Tracking/stationary Used whenever there is no brake lockup and the vehicle continues along its intended path without rotation. Stopped, slowing, turning, or accelerating to avoid a rear-end collision are examples.	1	1
2 Skidding longitudinally->rotation less than 30 degrees Used whenever there is brake lockup or whenever skid marks are apparent without brake lockup (braking or non-braking) and rotation is less than 30 degrees clockwise or counterclockwise. If there is no information to support rotation greater than or equal to 30 degrees, then use this element.	2	2
3 Skidding laterally->clockwise rotation Used whenever the vehicle rotates clockwise, relative to the driver's seating position. The vehicle must rotate 30 degrees or more. This element also applies when the driver attempts a steering input (i.e. swerves right), but the vehicle rotates clockwise.	3	3
4 Skidding laterally->counterclockwise rotation Used whenever the vehicle rotates counterclockwise, relative to the driver's seating position. The vehicle must rotate 30 degrees or more. This element also applies when the driver attempts a steering input (i.e. swerves left), but the vehicle rotates counterclockwise.	4	4
5 Other control loss (specify) :	5	5
8888 No driver present Used when no driver is present in the vehicle at the time it was involved in the crash.	-8888	8888
9999 Pre-crash stability unknown Used whenever the stability of the vehicle (after the critical event) cannot be determined.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Pre-impact location on trafficway**

Oracle Variable: PRECRASH.LOCATION

1382

Screen Name: Pre-impact location on trafficway

Form # - Name: 6 - Where was your vehicle just prior to the first impact?

SAS Data Set:

SAS Variable:

Remarks:
This variable reports the location of the subject vehicle prior to impact. The responses for this variable must relate directly to the response coded for pre-impact stability.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Stayed in original travel lane	1	1
Used whenever the vehicle remains within the boundaries of its initial travel lane. The perimeter of the vehicle is to be considered when determining the vehicle's status within its travel lane.		
2 Stayed on roadway but left original travel lane	2	2
Coded whenever the "majority" of the vehicle departs its initial travel lane; however, the "majority" of the vehicle remains within the boundaries of the roadway (travel lanes). The perimeter of the vehicle is to be considered when determining the vehicles status within the roadway.		
3 Stayed on roadway, not known if left original travel lane	3	3
Used whenever it cannot be ascertained whether the "majority" of the vehicle remains within its initial travel lane. To use this code, the "majority" of the vehicle must remain within the boundaries of the roadway.		
4 Departed roadway	4	4
Used whenever the "majority" of the vehicle departs the roadway as a result of a precrash motion. The roadway departure must not be related to the post impact trajectory of a crash within the roadway.		
5 Remained off roadway	5	5
Used whenever the precrash motion occurs outside the boundaries of the roadway. This includes traveling on the shoulders, within the median, on the roadside, or off the trafficway.		
6 Returned to roadway	6	6
Used whenever the "majority" of the vehicle is on the roadway, departs the roadway and then returns to the roadway during precrash motion.		
7 Entered roadway	7	7
Used whenever the vehicle is not previously on the roadway and then the majority of the vehicle enters the roadway during precrash motion.		
8888 No driver present	-8888	8888
Used when no driver is present in the vehicle at the time it is involved in the crash.		
9999 Unknown	-9999	9999
Used whenever the precrash motion of the vehicle cannot be determined.		

Sources: RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Pre-first harmful event maneuver sequence**   417

Oracle Variable: HARMFULEVENTSEQ.PRE_FIRST_HARMFUL_EVENT_SEQ   1182

Screen Name: Pre-first harmful event maneuver sequence

Form # - Name: 7 - What were the lateral movements of your vehicle immediately before impact?

SAS Data Set:

SAS Variable:

Remarks:

This variable describes lateral vehicle movements along the vehicle's trajectory between the end of the pre-event movement phase and the first harmful event. For the purposes of this variable, lateral movement components are defined as lane departures/returns, road departures/returns, and a limited number of non-contact vehicle motions (i.e. power unit jackknife and trailer swing). If the vehicle changed lanes before the critical envelope, this should not be included. Power unit jackknife and trailer swing events that result in contact between the vehicle's units are excluded because these types of events are considered harmful events.

In cases where a lane departure/return also represents a road departure/return, the maneuver should be classified in the road category. Specifically, road designated element values take precedence over lane designated element values. Code every lane/road departure and return.

Since the Researcher will sequence all lateral movements, certain attributes may be used multiple times.

If there are no lateral movement components between the end of the pre-event movement phase and the initiation point of the first harmful event, this variable should be coded No pre-first harmful event maneuver sequence. For example, if an inattentive driver suddenly realizes that traffic forward of his position is stopped, applies heavy braking inputs causing the vehicle to skid forward to impact without departing its travel lane, then code No pre-first harmful event maneuver sequence. Four examples are presented below (in schematic form) to demonstrate proper coding selections:

Range:

As many as apply

Method: Select and Sequence all that apply _____

Element Attributes:	**Oracle Value**	**SAS Value**
1 No pre-first harmful event maneuver sequence Used when there are no lateral movement components in this vehicle's trajectory prior to the first harmful event.	1	1
2 Lane departure- left side Used when this vehicle departs the left side of the travel lane prior to the first harmful event. If the lane departure also represents a road departure, code this event in the road departure category.	2	2
3 Lane return- left side Used when the subject vehicle returns to the left side of the travel lane, after a previous departure, prior to the first harmful event. If the lane return also represents a road return, code this event in the road return category	3	3
4 Lane departure- right side Used when this vehicle departs the right side of the travel lane prior to the first harmful event. If the lane departure also represents a road departure, code this event in the road departure category.	4	4
5 Lane return- right side Used when the subject vehicle returns to the right side of the travel lane, after a previous departure, prior to the first harmful event. If the lane return also represents a road return, code this event in the road return category.	5	5

Form Screen Name: **Pre-first harmful event maneuver sequence**

Oracle Variable: HARMFULEVENTSEQ.PRE_FIRST_HARMFUL_EVENT_SEQ   1182

	Element Attributes:	**Oracle Value**	**SAS Value**
6	Road departure- left side Used when this vehicle departs the left side of the road prior to the first harmful event.	6	6
7	Road return- left side Used when the subject vehicle returns to the left side of the road, after a previous road departure, prior to the first harmful event.	7	7
8	Road departure- right side Used when this vehicle departs the right side of the road prior to the first harmful event.	8	8
9	Road return- right side Used when the subject vehicle returns to the right side of the road, after a previous road departure, prior to the first harmful event.	9	9
10	Non-contact power unit jackknife Used when the power unit of a vehicle combination jackknifes without contacting the towed unit prior to the first harmful event.	10	10
11	Non-contact trailer swing Used when the towed unit of a vehicle combination swings without contacting the power unit prior to the first harmful event.	11	11
12	Other (specify) : Used when the subject vehicle experiences a lateral movement component that is not described in preceding elements.	12	12
8888	No driver present Used when there is no driver present in the vehicle at the time of the crash.	-8888	8888
9999	Unknown Used when there is insufficient information to determine the subject vehicle's trajectory between the end of the pre-event movement phase and the initiation point of the first harmful event or when there is insufficient information to determine specific lateral movement components.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **First harmful event crash type**

Oracle Variable: CRASH.CRASH_TYPE   1379

Screen Name: First harmful event crash type

Form # - Name: 8 -

SAS Data Set:

SAS Variable:

Remarks:

The Crash Type is a numeric value assigned by selecting the Crash Category and the Crash Configuration. The number can be directly entered or edited here, however, the two-step process of selecting the Crash Category And Crash Configuration is preferred to visualize the crash scenario. The first harmful event may include a collision between a vehicle and some object, accompanied by property damage or human injury. The object may be another vehicle, a person, an animal, a fixed object, the road surface, or the ground. If the first collision is a rollover, the impact is with the ground or road surface. The collision may also involve plowing into soft ground, if severe vehicle deceleration results in damage or injury. A road departure without damage or injury is not defined as a harmful event.

To access the category choices double click on the white box next to Crash Type and the following window opens: Variables CrashType (Category) and Crash Type (Configuration); are used for categorizing the collisions of drivers involved in crashes.

To determine the proper crash type, refer to the three step decision process outlined below:

    Step 1 - Determine the appropriate Crash Category.
    Step 2 - Determine the appropriate Crash Configuration.
    Step 3 - Determine the specific Crash Type from the graphic icons .

The attributes for this variable are the categories. The configuration and specific crash type attributes are further discussed under variables Crash Configuration, and Crash Type.

The definitions of each of the six categories are as follows:

    --Single Driver - The first harmful event involves a collision between an in-transport vehicle and an object, or an off roadway rollover. A harmful event involving two in-transport vehicles is excluded from this category. Note, the impact location on the vehicle is not a consideration for crash types in this category.
    --Same Trafficway, Same Direction - The first harmful event occurred while both vehicles were traveling in the same direction on the same trafficway.
    --Same Trafficway, Opposite Direction - The first harmful event occurred while both vehicles were traveling in opposite directions on the same trafficway.
    --Change Trafficway, Vehicle Turning - The first harmful event occurred when the vehicle is either turning or merging while attempting to change from one trafficway to another trafficway. Trafficway for this variable is loosely defined to include driveways, alleys and parking lots when a vehicle is either entering or exiting a trafficway.
    --Intersecting Paths (Vehicle Damage)- The first harmful event involves situations where vehicle trajectories intersect. It is important to note the location of damage to each vehicle for crash typing. The location of damage to each vehicle is important to determine the correct crash type.
    --Miscellaneous - The first harmful event involves a crash type which cannot be described in the Categories above and thus is included in this category. Select this category, if there is insufficient information to choose between categories. Included are vehicles that are backing, third or subsequent vehicles involved in the crash, vehicles not involved in the first harmful event, U-turns, etc.

Each category is subdivided into crash configuration(s). The configurations are discussed below.

Category I. Single Driver

    Configurations A and B. Roadside Departure - The vehicle departs either the right or left side of roadway with the first harmful event occurring off the roadway. Right versus left is based on the side of the roadway departed immediately prior to the first harmful event.

    Configuration C. Forward Impact - The vehicle strikes an object on the roadway or off the end of a trafficway

Oracle Variable: CRASH.CRASH_TYPE   1379

while moving forward.

Category II. Same Trafficway, Same Direction

Configuration D. Rear-End - The front of the overtaking vehicle impacts the rear of the other vehicle. NOTE: Even if the rear-impacted vehicle starts to make a turn, code here (not in Category IV).

Configuration E. Forward Impact - The front of the overtaking vehicle impacts the rear of the other vehicle, following a steering maneuver around a noninvolved vehicle or object.

Configuration F. Sideswipe/Angle - The two vehicles are involved in a shallow, glancing impact involving the side of one or both vehicles. NOTE: CDC guidelines for sideswipes are not considered when assessing this configuration.

Category III. Same Trafficway, Opposite Direction

Configuration G. Head-On - The frontal area of one vehicle impacts the frontal area of another.

Configuration H. Forward Impact - The frontal area of one vehicle impacts the frontal area of another following a steering maneuver around a noninvolved vehicle or object.

Configuration I. Sideswipe/Angle - The two vehicles are involved in a shallow, glancing impact involving the side of one or both vehicles.

Category IV. Changing Trafficway, Vehicle Turning

Configuration J. Turn Into Path - The two vehicles are initially on the same trafficway when one vehicle tries to turn onto another trafficway and pulls in front of the other vehicle. Vehicles making a "U" turn are identified in Category VI. Miscellaneous.

Configuration K. Turn Into Path - The two vehicles are initially on different trafficways when one attempts to turn into the same trafficway as the other vehicle. NOTE: The focus of this configuration is on the turning maneuver from one trafficway to another and not on the vehicles' plane of contact.

Category V. Intersecting Paths (Vehicle Damage)

Configuration L. Straight Paths - The two vehicles are proceeding (or attempting to proceed) straight ahead.

Category VI. Miscellaneous

Configuration M. Backing, Etc. - One of the two vehicles involved is a backing vehicle, regardless of its location on the trafficway or the damage location on the vehicles. Any crash configuration which cannot be described in Category I. through V. is included here.

The configurations are delineated into specific crash types. These types can be identified by referring to the crash type diagram in Figure 6.

The crash types in Category 1. (Single Driver) involve an impact between a vehicle and an object. Categories II. through VI. identify specific collision combinations which must be coded in specified pairs (i.e. the pair code defines the Crash Type). As an example, the combination Rear-end, stopped and Rear-end, specifics other or Rear-end, stopped and Slower, straight ahead are not valid since Rear-end, stopped only has meaning when linked to Stopped.

A crash involving a vehicle impacting a "driverless in-transport vehicle" is coded ...,specifics other in the appropriate configuration-category. For example, a vehicle which impacts the rear of a driverless in-transport vehicle is encoded Rear-end, specifics other.

Form Screen Name: **First harmful event crash type**

Oracle Variable: CRASH.CRASH_TYPE   1379

In crashes involving more than two vehicles or in collision sequences involving a combination of vehicle-to- object-to- vehicle impacts, code the Crash Type for the vehicle(s) involved in the first harmful event. All other vehicles are coded Other crash type.

Keep in mind that intended actions play an important role in the coding scheme. For example, crash type Slower, turning left is selected over type Slower, straight ahead if the subject vehicle was traveling slower with intention of turning left. NOTE: The turning action need not have occurred prior to the collision. The driver's intent to turn is the key.

Range:

Method: Select from appendix list _____

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Did this vehicle have right of way** 422

Oracle Variable: PRECRASH.RIGHT_OF_WAY 1383

Screen Name: Did this vehicle have right of way

Form # - Name: 9 -

SAS Data Set:

SAS Variable:

Remarks:

This variable establishes vehicle right-of-way characteristics, from a legal perspective, for the subject vehicle. Specifically, did this vehicle have the right-of-way? Appropriate responses may require interpretation of both State Vehicle and Traffic laws as well as local ordinances.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No	1	1
Used when the subject vehicle does not have the right-of-way as defined from a legal perspective.		
2 Yes	2	2
Used when the subject vehicle has the right-of-way as defined from a legal perspective.		
8888 No driver present	-8888	8888
9997 Not Applicable	-9997	9997
Used when right-of-way considerations are not applicable to the circumstances of this crash. An example would be the front-to-rear impact sequence. Right-of-way issues are typically not applicable to this crash type. A second example would be the single vehicle roadway departure crash scenario (i.e., right-of-way considerations are not applicable to this crash type).		
9999 Unknown	-9999	9999
Used when there is insufficient information to determine right-of-way considerations.		

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Vehicle maneuver during pre-crash cargo shift**   423

Oracle Variable: CARGOSHIFT.CARGO_SHIFT_MANEUVER   2056

Screen Name: Vehicle maneuver during pre-crash cargo shift

Form # - Name: 10 -

SAS Data Set:

SAS Variable:

Remarks:

This variable captures driver/vehicle actions at the time the cargo shift begins. Select all elements that most appropriately describe these actions and vehicle velocity characteristics. Cargo is defined as any object in the vehicle that can shift that vehicle's center of gravity and affect handling characteristics. This variable is applicable to all classes of vehicles.

Range:

Method: Fill all that apply

Element Attributes:	Oracle Value	SAS Value
1 No cargo Used when the vehicle has no cargo.	1	1
2 No cargo shift Used when the vehicle contains cargo, but there was no cargo shift pre-crash.	2	2
3 Traversing curve Used when the driver is traversing a curve at the time the cargo begins to shift.	3	3
4 Completing turn Used when the driver is attempting to turn at the time the cargo begins to shift.	4	4
5 Traversing straight section Used when the driver is traversing a straight roadway segment at the time the cargo begins to shift.	5	5
6 Completing avoidance maneuver Used when the driver initiates a precrash avoidance maneuver at or prior to the time the cargo begins to shift.	6	6
7 Driving at constant velocity Used when the driver is attempting to maintain a constant velocity	7	7
8 Accelerating Used when the driver is accelerating at the time the cargo begins to shift.	8	8
9 Decelerating using throttle input only Used when the driver is decelerating and decelerates solely by reducing throttle input at the time the cargo begins to shift.	9	9
10 Decelerating using light braking Used when the driver is decelerating using light braking effort at the time the cargo begins to shift. While the term "light braking" is a subjective evaluation, it generally implies that the level of braking effort is less than the level typically associated with a normal traffic stop.	10	10
11 Decelerating using moderate braking	11	11

Form Screen Name:　　**Vehicle maneuver during pre-crash cargo shift**　　　　　424

　Oracle Variable:　　CARGOSHIFT.CARGO_SHIFT_MANEUVER　　　　　2056

		Oracle Value	**SAS Value**
	Element Attributes: Used when the driver is decelerating using a moderate level of braking effort at the time the cargo begins to shift. A moderate level of braking effort generally implies that the level of braking effort is similar to the level typically associated with a normal traffic stop.		
12	Decelerating using heavy braking Used when the driver is decelerating using a heavy level of braking effort (e.g., panic stop) at the time the cargo begins to shift. The vehicle will typically experience wheel "lock-up" in this circumstance, however, wheel lock is not a requirement for using this designation.	12	12
13	Other (specify) : Used when the driver/vehicle action or velocity characteristic is not described in preceding elements. An annotation is required to describe the circumstance.	13	13
8888	No driver present	-8888	8888
9999	Unknown Used when there is insufficient information to determine if cargo shifted and when there is insufficient information to determine the driver/vehicle actions and velocity characteristics associated with the cargo shift event.	-9999	9999

　Sources:

　　　　RESEARCHER ASSESSMENT
　　　　REVIEWER ASSESSMENT

Form Screen Name: **Pre-crash cargo spillage**

Oracle Variable: PRECRASH.PRE_CRASH_SPILL   3228

Screen Name: Pre-crash cargo spillage

Form # - Name: 11 -

SAS Data Set:

SAS Variable:

Remarks:

This element value establishes the occurrence of cargo spillage during the pre-crash phase.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No cargo Reserved for circumstances where the vehicle configurations are not regarded as legitimate "over-the-road" configurations, and for vehicles that are carrying no cargo.	1	1
2 No precrash cargo spillage Used when this vehicle is carrying cargo, but does not experience a precrash loss of any cargo.	2	2
3 Yes (specify) : Used when pre-crash cargo spillage occurs. Specify the type of cargo that spilled and the total proportion of the cargo that spilled.	3	3
8888 No driver present	-8888	8888
9999 Unknown Used when there is insufficient information to determine if precrash cargo spillage occurred.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Vehicle location at start of pre-crash cargo shift**   426

Oracle Variable: PRECRASH.CARGO_SHIFT_LOCATION   2044

Screen Name: Vehicle location at start of pre-crash cargo shift

Form # - Name: 12 -

SAS Data Set:

SAS Variable:

Remarks:

   This element value identifies vehicle location at the start of the cargo shift sequence

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No cargo Reserved for circumstances where the vehicle configurations are not regarded as legitimate "over-the-road" configurations, and for vehicles that are carrying no cargo.	1	1
2 No cargo shift Use when vehicle was carrying cargo, but it did not shift prior to the crash.	2	2
3 On roadway Used when the cargo shift begins while the vehicle is in designated travel lanes or in a parking lane within the roadway boundary.	3	3
4 On shoulder Used when the cargo shift begins while the vehicle is on the shoulder of the roadway. The shoulder area does not have to be paved to be considered as shoulder. This, however, must be stabilized and graded. Nonstabilized areas adjacent to the roadway are considered to be part of the roadside area.	4	4
5 On roadside Used when the cargo shift begins while the vehicle is in the area between the outside edge of the shoulder and the right-of-way boundary. If there is no shoulder, the roadside area is defined as that area between the edge of the roadway and the right-of-way boundary. For this variable, the area beyond the right-of-way boundary is also considered to be part of the roadside designation.	5	5
6 On median Used when the cargo shift begins while the vehicle is in the median area that separates the roadways within the trafficway. The median may be unprotected or protected by a median barrier. Painted flush areas must be 1.2 m in width to constitute a median.	6	6
8888 No driver present	-8888	8888
9999 Unknown Used when there is insufficient information to determine if a cargo shift occurred and when there is insufficient information to determine the vehicle's location at the start of the cargo shift sequence.	-9999	9999

Sources:

   RESEARCHER ASSESSMENT
   REVIEWER ASSESSMENT

Form Screen Name: Time driving this portion of trip (1/2 hr increments)	**Driver Condition Support Data** 427

Oracle Variable: PRECRASH.TIME_ELAPS_DRIVING

2272

Screen Name: Time driving this portion of trip (1/2 hr increments)

Form # - Name: 13 - How long had you been driving on this trip?

SAS Data Set:

SAS Variable:

Remarks:

Enter the driving time elapsed for this trip.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 < half hour Used when driving on this trip is less than one half hour.	1	1
2 30-59 minutes Used when driving on this trip is between 30 and 59 minutes	2	2
3 60-89 minutes Used when driving on this trip is between 60 minutes and 89 minutes	3	3
4 90-119 minutes Used when driving time is between 90 and 119 minutes.	4	4
5 2 to < 2 1/2 hours Used when driving on this trip is equal to or greater than two hours but less than two and one half hours.	5	5
6 2 1/2 to <3 hours Used when driving on this trip is equal to or greater than two and one half hours but less than three hours.	6	6
7 3 to <3 1/2 hours Used when driving on this trip is equal to or greater than three hours but less than three and one half hours.	7	7
8 3 1/2 to <4 hours Used when driving on this trip is equal to or greater than three and one half hours but less than four hours.	8	8
9 => 4 hours Used when driving on this trip is equal to or greater than four hours	9	9
8888 No driver present Used when there is no driver present in the driver's seat at the time of the crash.	-8888	8888
9999 Unknown Used when it unable to be determined the length of time traveled on this trip.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Sleep start prior to crash**

2240

Oracle Variable: FATIGUE.SLEEPSTART

Screen Name: Sleep start prior to crash

Form # - Name: 14 - What time did your last sleep begin?

SAS Data Set:

SAS Variable:

Remarks:
Start time of sleep interval (military time)

Range:

Method: Enter Date & Time ____ ____/ ____ ____/

Element Attributes:	**Oracle Value**	**SAS Value**
8888 No driver present	-8888	8888
9999 Unknown	-9999	9999

Used when there is insufficient information to establish the requested time frame.

Sources:
RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **End of last sleep**

2241

Oracle Variable: FATIGUE.SLEEPEND

Screen Name: End of last sleep

Form # - Name: 15 - What time did your last sleep end?

SAS Data Set:

SAS Variable:

Remarks:
>   End of last sleep interval (military time)

Range:

Method: Enter Date & Time ____ ____/ ____ ____/

Element Attributes:	Oracle Value	SAS Value
88 No driver present Used when there is no driver present in vehicle at time of crash.	-8888	8888
9999 Unknown Used when there is insufficient information to establish the requested time frame.	-9999	9999

Sources:
>   RESEARCHER ASSESSMENT
>   REVIEWER ASSESSMENT

Form Screen Name: **Duration of last sleep**

Oracle Variable: FATIGUE.LASTSLEEP

2239

Screen Name: Duration of last sleep

Form # - Name: 16 - How long did you sleep, the last time you slept?

SAS Data Set:

SAS Variable:

Remarks:
Number of hours the driver slept in time period leading up to the crash. This period may reflect the "best estimate" of the Case Reviewer as derived from available information sources.

Range:

Method: Enter duration in hours : minutes ___ ___ :

Element Attributes:	Oracle Value	SAS Value
8888 No driver present	-8888	8888
9999 Unknown	-9999	9999
Used when there is insufficient information to establish the requested time frame.		

Sources:
RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Sleep in last 24 hours**

Oracle Variable: FATIGUE.SLEEP24HRS   2243

Screen Name: Sleep in last 24 hours

Form # - Name: 17 - In the last 24 hours, how many hours of sleep did you get?

SAS Data Set:

SAS Variable:

Remarks:
　　Total hours of sleep in last 24 hours (includes main sleep plus any naps). For the Driver Interview, code the interviewee's response. For the PAF, these periods may reflect the "best estimate" of the Case Reviewer as derived from available information sources.

Range:

Method: Enter duration in hours : minutes ___ ___ :

		Oracle Value	SAS Value
Element Attributes:			
8888	No Driver Present	-8888	8888
	Used when there is no driver in the driver's seated position at the time of the crash.		
9999	Unknown	-9999	9999
	Used when there is insufficient information to establish the requested time frame.		

Sources:
　　　RESEARCHER ASSESSMENT
　　　REVIEWER ASSESSMENT

Form Screen Name: **Time since last sleep**

Oracle Variable: FATIGUE.HOURSAWAKE

2242

Screen Name: Time since last sleep

Form # - Name: 18 - How long has it been since your last sleep?

SAS Data Set:

SAS Variable:

Remarks:
    Hours since last sleep

Range:

Method: Enter duration in hours : minutes ___ ___ :

Element Attributes:	**Oracle Value**	**SAS Value**
8888 No driver present	-8888	8888
9999 Unknown	-9999	9999

Sources:
        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name: **What is your normal average daily sleep interval?**

Oracle Variable: FATIGUE.AVGSLEEPINT

2266

Screen Name: What is your normal average daily sleep interval?

Form # - Name: 19 - How long do you normally sleep each night/day?

SAS Data Set:

SAS Variable:

Remarks:

This variable sequence documents the driver's average daily sleep interval. It is unlikely that the intervals will be less than four hours or greater than twelve hours.

Range:

Method: Enter duration in hours : minutes ___ ___ :

Element Attributes:	Oracle Value	SAS Value
8888 No driver present	-8888	8888
9999 Unknown	-9999	9999
Used when there is insufficient information to establish the requested time frames.		

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Did you change your sleep or work hours during the last**

Oracle Variable: FATIGUE.SLEEPROTATE   2248

Screen Name: Did you change your sleep or work hours during the last seven days?

Form # - Name: 20 - During the last 7 days, did your sleep or work schedule rotate or shift?

SAS Data Set:

SAS Variable:

Remarks:

    Did the driver change sleep pattern or rotate his/her work shift during the last seven day interval (e.g. rotating shift schedule)? This variable addresses changes in the driver's sleep pattern during the seven day period preceding the crash. This will include changes in sleep patterns due to health or emotional reasons.

Range:

 Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No	1	1
2 Yes	2	2
8888 No driver present	-8888	8888

Sources:

        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name: Longest period (hours:mins) worked during the seven-day

Oracle Variable: FATIGUE.WORKLONGEST   2255

Screen Name: Longest period (hours:mins) worked during the seven-day interval preceding crash.

Form # - Name: 21 - (If applicable) In the last 7 days, what was your longest period worked?

SAS Data Set:

SAS Variable:

Remarks:
   Longest period worked during the seven-day interval preceding crash. Includes lunch hours and breaks but not
   commuting time.

Range:

 Method: Enter duration in hours : minutes ___ ___ :

		Oracle Value	SAS Value
Element Attributes:			
8888	No driver present	-8888	8888
9997	Not applicable Used for drivers not employed outside the home.	-9997	9997
9999	Unknown	-9999	9999

Sources:
         RESEARCHER ASSESSMENT
         REVIEWER ASSESSMENT

Form Screen Name: **Shortest hourly period worked during the sever-day interval**

Oracle Variable: FATIGUE.WORKSHORTEST

2256

Screen Name: Shortest hourly period worked during the seven-day interval preceding crash.

Form # - Name: 22 - (If applicable) In the last 7 days, what was your shortest day worked?

SAS Data Set:

SAS Variable:

Remarks:

  Shortest Day worked during the seven day interval preceding the crash.

Range:

 Method: Enter duration in hours : minutes ___ ___ :

Element Attributes:	Oracle Value	SAS Value
8888 No driver present	-8888	8888
9997 Not applicable Used for drivers not employed outside the home.	-9997	9997
9999 Unknown	-9999	9999

Sources:

        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name:　　**Average number of hours worked during the seven-day**

Oracle Variable:　FATIGUE.WORKAVG　　　　　　　　　　　　　　　2257

Screen Name:　　Average number of hours worked during the seven-day interval preceding crash.

Form # - Name:　　23 - (If applicable) In the last 7 days, what was your average number of hours worked per day?

SAS Data Set:

SAS Variable:

Remarks:

　　Average daily hours worked during the seven day interval preceding crash. Give the average over the number of days worked in the last 7 days (e.g. If the driver worked 40 hours M-F, then divide 40 by 5, not by 7).

Range:

Method:　Enter duration in hours : minutes ___ ___ :

Element Attributes:	Oracle Value	SAS Value
8888　No driver present	-8888	8888
9997　Not applicable 　　　Used for drivers not employed outside the home.	-9997	9997
9999　Unknown	-9999	9999

Sources:

　　　　RESEARCHER ASSESSMENT
　　　　REVIEWER ASSESSMENT

Form Screen Name: **Total Hours Worked In Seven Days**

Oracle Variable: FATIGUE.WORKTOTAL

2259

Screen Name: Total Hours Worked In Seven Days

Form # - Name: 24 - (If applicable) In the last 7 days, what is the total number of hours worked?

SAS Data Set:

SAS Variable:

Remarks:

Code the total number of hours the driver worked in the last seven days

Range:

Method: Enter Hours _____

		Oracle Value	SAS Value
Element Attributes:			
8888	No driver present	-8888	8888
9997	Not applicable	-9997	9997
	Used for drivers not employed outside the home.		
9999	Unknown	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Driver fatigue**

   Oracle Variable: FATIGUE.DRIVER_FATIGUE   3294

   Screen Name: Driver fatigue

   Form # - Name: 25 -

   SAS Data Set:

   SAS Variable:

   Remarks:

     This element value assesses driver fatigue at the time of the crash. The assessment is based on
     an evaluation of the driver's current and preceding sleep schedules, current and preceding work
     schedules, and a variety of other fatigue related factors including recreational and non-work
     activities. This assessment reflects the Researcher's best judgment with respect to this issue and is based on all available
     information inputs.

   Range:

   Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	Driver fatigued	1	1
	Used when available support information indicates that the driver has not received adequate sleep, is tired/fatigued due to extended work hours, is tired/fatigued due to strenuous recreational activities or strenuous nonwork activities, or is tired/fatigued due to a combination of factors.		
2	Driver not fatigued	2	2
	Used when there is no information indicating that the driver exhibited symptoms of fatigue and support information indicates that rest and work intervals were within reasonable bounds.		
8888	No driver present	-8888	8888
9999	Unknown	-9999	9999

   Sources:

      RESEARCHER ASSESSMENT
      REVIEWER ASSESSMENT

Form Screen Name: Police reported alcohol presence	**Driver Physical Factors** 440

Oracle Variable: OFFICIALRECORDS.PAR_ALCOHOL_PRES

Screen Name: Police reported alcohol presence

Form # - Name: 26 -

SAS Data Set:

SAS Variable:

Remarks:

Record the PAR information about alcohol presence. Examine the PAR carefully as this information may be in a check box, written code or in the narrative notes.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No alcohol present	1	1
Police report gives indication that no alcohol was present for this driver. This must be a positive indicator, (i.e. PAR must indicate no alcohol if variable is present).		
2 Yes - alcohol present	2	2
Police indicate on PAR that this driver had alcohol presence, either by test, odor or presence of open containers in vehicle.		
3 Not reported	3	3
Police do not report presence or absence on PAR.		
8888 No driver present	-8888	8888
9999 Unknown	-9999	9999
Police are not specific about alcohol presence. Alcohol variable on PAR is blank and no mention is made of presence or absence.		

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **BAC Test Result**

Oracle Variable: DRIVER_HEALTH.ALCOHOL_TEST_RESULT   908

Screen Name: BAC Test Result

Form # - Name: 27 -

SAS Data Set:

SAS Variable:

Remarks:
     Test results from medical records or PAR.

Range:
     Range 0- 0.65; Warning >0.33; Test performed, results unknown; No test; No driver present

Method: Enter a value _____

Element Attributes:	Oracle Value	SAS Value
8888 No driver present	-8888	8888
9996 No test performed	-9996	9996
9997 BAC test performed, results unknown Coded in instances when the researcher can determine a BAC test was performed but is unable to obtain the results.	-9997	9997
9999 Unknown	-9999	9999

Sources:
          MEDICAL RECORDS
          PAR

Form Screen Name:	**BAC Test Source Official Records**	**Driver Physical Factors**	442

Oracle Variable: DRIVER_HEALTH.ALCOHOL_TEST_SOURCE 921

Screen Name: BAC Test Source Official Records

Form # - Name: 28 -

SAS Data Set:

SAS Variable:

Remarks:

    This element value documents the source of BAC test results.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No BAC test Used when no BAC test has been administered.	1	1
2 Medical Record Used when the source of the BAC test is a medical record (including autopsy report)	2	2
3 Police Reported Used when the BAC test result is reported on the police report or in the investigating officer's supplementary notes.	3	3
4 Other (specify) : Used when test results are obtained from sources other than the police report and medical records.	4	4
8888 No driver present	-8888	8888
9996 No test performed	-9996	9996
9997 Not applicable	-9997	9997
9999 Unknown	-9999	9999

Sources:

       RESEARCHER ASSESSMENT

       REVIEWER ASSESSMENT

Form Screen Name: **Time delay between crash and alcohol test**

Oracle Variable: DRIVER_HEALTH.ALCOHOL_TEST_DELAY   3257

Screen Name: Time delay between crash and alcohol test

Form # - Name: 29 -

SAS Data Set:

SAS Variable:

Remarks:

Time between the time of the crash and the time blood was drawn or breath test administered.
After automated data entry is operational this will be autocalculated by subtracting CRASH.TIME from
DRIVER.ALCOHOL_TEST_WHEN Until that time, the researcher or reviewer must subtract the time of crash from the time
the test was administered or blood drawn.

Range:

Method: Enter Hours _____

Element Attributes:	**Oracle Value**	**SAS Value**
88 No driver present Used when there is no driver in the driver's seated position of the vehicle at the time of the crash.	-8888	8888
9997 Not applicable	-9997	9997
9999 Unknown Used when there is insufficient information to make a determination.	-9999	9999

Sources:

CALCULATION

Form Screen Name: **Drug presence from all (any) sources**

4037

Oracle Variable: DRIVER_HEALTH.DRUG_PRESENCE

Screen Name: Drug presence from all (any) sources

Form # - Name: 30 -

SAS Data Set:

SAS Variable:

Remarks:
Drug presence from any valid source as a final assessment. Sources can be PAR, medical records, interviews, researcher observation, etc.
Yes answer should open list of drugs which is a multiple pick.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No	1	1
Used when no drugs present from any source.		
2 Yes	2	2
Used when drugs present in driver. Any source, any drug.		
8888 No driver present	-8888	8888
Used when no driver present in vehicle.		
9999 Unknown	-9999	9999
Used when unknown if any drugs present in driver		

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Name(s) of drug(s) present in driver**

Oracle Variable: DRIVERDRUG.DRUG_NAME_PRESENT   4042

Screen Name: Name(s) of drug(s) present in driver

Form # - Name: 31 -

SAS Data Set:

SAS Variable:

Remarks:
    List all drugs present in driver's bloodstream.

Range:

 Method: Select from appendix list _____

 Sources:
            RESEARCHER ASSESSMENT
            REVIEWER ASSESSMENT

Form Screen Name: **Illness**

Oracle Variable: DRIVER_ILLNESS.ILLNESS   3299

Screen Name: Illness

Form # - Name: 32 - Were you ill at the time of the crash?

SAS Data Set:

SAS Variable:

Remarks:

This element value establishes the possibility of an illness influence on the driver's performance. Major medical problems (i.e., heart attack, seizure) should have medical verification.

Range:

Method: Fill a single item

Element Attributes:		**Oracle Value**	**SAS Value**
1	No	1	1
	Used when the driver is not ill.		
2	Yes	2	2
8888	No driver present	-8888	8888
9999	Unknown	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: Other physical factors

Oracle Variable: DRIVER_PHYSICALFACTOR.PHYSICAL_FACTOR   3321

Screen Name: Other physical factors

Form # - Name: 33 -

SAS Data Set:

SAS Variable:

Remarks:

   This element value documents other physical factors that may be relevant to the driver's precrash driving performance. Again, selection of these factors does not imply a causal link.

Range:

 Method: Fill all that apply

Element Attributes:	**Oracle Value**	**SAS Value**
1 No other physical factors Used when the listed physical factors are not relevant to this driver.	1	1
2 Hearing impairment Used when the driver has a diagnosed hearing impairment. Entries in the electronic data file should be annotated to indicate the nature and extent of the impairment.	2	2
3 Vision Impairment Used when the driver has a diagnosed vision impairment. Entries in the electronic data file should be annotated to indicate the nature and extent of the impairment.	3	3
4 Prosthesis (specify) : Used when the driver is wearing a prosthesis. An annotation is required to specify the type of prosthesis and any limitations on driver performance associated with the prosthesis.	4	4
5 Paraplegia Used when the driver has paralysis of the lower limbs. Entries in the electronic data file should be annotated to indicate the use of hand controls.	5	5
6 Strenuous recreational activities Used when the driver participates in strenuous recreational activities during the seven day interval preceding the crash. Entries in the electronic file should be annotated to specify the nature and duration of the activity as well as the length of the time interval between activity completion and crash occurrence.	6	6
7 Strenuous non-work activities Used when the driver participates/engages in strenuous non-work activities (e.g., household chores) during the seven day interval preceding the crash. Entries in the electronic file should be annotated to specify the nature and duration of the activity as well as the length of the time interval between activity completion and crash occurrence.	7	7
8 Sleep apnea Used when the driver has an obstructive sleep apnea disorder.	8	8
9 Quadriplegia Used when the driver has full or partial paralysis of all limbs. Entries in the electronic data file should be annotated to specify the type of controls used.	9	9

Form Screen Name: **Other physical factors**

Oracle Variable: DRIVER_PHYSICALFACTOR.PHYSICAL_FACTOR   3321

		Oracle Value	SAS Value
Element Attributes:			
10	Other	10	10
	Used when there is a relevant physical factor that is not described in preceding elements. An annotation is required to specify the nature of this factor.		
8888	No driver present	-8888	8888
	Used when there is no driver in the driver's seated position at the time of the crash.		
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine if other physical factors are relevant to this crash.		

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Hearing impairment**

677

Oracle Variable: DRIVER_HEALTH.HEARING_IMPAIRMENT

Screen Name: Hearing impairment

Form # - Name: 34 - Do you have a hearing aid?

SAS Data Set:

SAS Variable:

Remarks:

Determine if the driver has a hearing aid.

Range:

Method: Fill a single item

Element Attributes:		Oracle Value	SAS Value
1	No	1	1
2	Yes - owns hearing aid	2	2
8888	No driver present	-8888	8888
9999	Unknown	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Hearing aid worn?**

Oracle Variable: DRIVER_HEALTH.HEAR_WORN   3083

Screen Name: Hearing aid worn?

Form # - Name: 35 - (If applicable) Were you wearing your hearing aid at the time of the crash?

SAS Data Set:

SAS Variable:

Remarks:
    Was the driver wearing his/her hearing aid at the time of the crash?

Range:

Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	No	1	1
2	Yes	2	2
9997	Not applicable	-9997	9997
9999	Unknown	-9999	9999

Sources:
        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name: **Driver inattention**

Oracle Variable: DRIVER_BEHAVIOR.THINKING_ABOUT

763

Screen Name: Driver inattention

Form # - Name: 36 - (If applicable) Were you thinking about any of your concerns immediately before the crash sequence?

SAS Data Set:

SAS Variable:

Remarks:

What was the driver thinking about immediately before the crash? This element value documents driver inattention (i.e., focusing on internal thought processes). Identification of these thought areas does not necessarily imply a causal relationship.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 Not thinking about concerns Used when there is no detectable incidence of driver inattention. In many cases this may be a subjective evaluation based on driver/witness inputs.	1	1
2 Personal problem Used when the driver is thinking about a personal problem. This problem type may be work related or may involve interpersonal relationships in the work environment. This problem type also includes other interpersonal relationships (excluding family members) outside the work environment and a variety of legal matters.	2	2
3 Family problem Used when the driver is thinking about a family problem. This problem type may involve interpersonal relationships within the family or an interpersonal relationship between another family member and a non-family individual. It also includes a variety of legal matters involving other family members.	3	3
4 Financial problem Used when the driver is thinking about a personal financial problem involving bills, overall debt, credit card payments, etc. Financial problems involving other family members are classified as a family problem.	4	4
5 Preceding argument Used when the driver is thinking about a preceding argument with other individual(s). These arguments may have occurred more than 12 hours prior to the crash.	5	5
6 Future event (e.g. vacation, wedding, etc.) Used when the driver is thinking about a future event. These events should have pleasant connection. For example, if the driver is thinking about attending a funeral, this problem type should be classified in the other category.	6	6
7 Thinking about concerns, thought focus unknown This attribute is used when it is believed that the driver is inattentive, but the nature of the thoughts cannot be determined.	7	7
8 Other (specify) : Used when the driver is thinking about a topic area that is not described in preceding elements. Specify the nature of the thought focus.	8	8
8888 No driver present	-8888	8888

Form Screen Name: Driver inattention

Oracle Variable: DRIVER_BEHAVIOR.THINKING_ABOUT

		Oracle Value	SAS Value
Element Attributes:	Used when there is no driver in the driver's seated position at the time of the crash.		
9997	Not applicable	-9997	9997
	Used when there were no concerns		
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine the nature of the driver's thought focus or to determine if the driver was inattentive as a result of focusing on internal thought processes.		

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Driver Recognition Factors

453

Form Screen Name: **Was the driver conversing with someone?**

Oracle Variable: DRIVER_BEHAVIOR.CONVERSATION

3332

Screen Name: Was the driver conversing with someone?

Form # - Name: 37 - Were you conversing with anyone?

SAS Data Set:

SAS Variable:

Remarks:

This element value documents driver particpation in conversation. The conversation can be associated with a variety of sources including conversing with passengers, talking on a cell phone, or talking on a CB radio.

Range:

Method: Fill a single item

	Element Attributes:	**Oracle Value**	**SAS Value**
1	Yes	6	6
2	No	7	7
8888	No driver present	-8888	8888
	Used when there is no driver in the driver's seated position at the time of the crash.		
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine if the driver is engaging in conversation during the immediate pre-crash phase.		

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Relationship of other conversing person to driver**

Oracle Variable: DRIVER_BEHAVIOR.CONVERSE_RELATIONSHIP   1162

Screen Name: Relationship of other conversing person to driver

Form # - Name: 38 - (If applicable) What is the relationship between you and the person you were talking to?

SAS Data Set:

SAS Variable:

Remarks:
This element value documents the relationship between the driver and the person the driver was conversing with during the immediate precrash phase.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Business Used when the driver is conversing and the relationship is work related	1	1
2 Social (friend) Used when the driver is conversing and the relationship is social in nature.	2	2
3 Boy/girlfriend Used when the driver is conversing ard there is a romantic nature to the relationship.	3	3
4 Husband/wife Used when the driver is conversing with his/her spouse.	4	4
5 Parent/child Used when the driver is conversing with a related child.	5	5
6 No relationship/stranger Used when there is no relationship between the driver and the person he or she was conversing with during the precrash phase.	6	6
7 Other (specify) : Used when the relationship is other than specified by preceding codes. Specify the nature of the relationship.	7	7
8888 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
9997 Not applicable Used when the driver was not conversing with anyone.	-9997	9997
9999 Unknown Used when there is insufficient information to determine if the driver is conversing with another individual during the precrash phase and/or if there is insufficient information to establish the nature of the relationship.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Nature of discussion**

Oracle Variable: DRIVER_BEHAVIOR.DISTRACTION_DISCUSS_SUBJECT   1173

Screen Name: Nature of discussion

Form # - Name: 39 - (If applicable) What was the nature of your discussion?

SAS Data Set:

SAS Variable:

Remarks:

This element value documents the nature of the conversation the driver is involved in during the precrash phase.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
2 Business Used when the driver is conversing and the conversation is work related.	1	1
3 Social Used when the conversation is not argumentative and does not involve work related issues.	2	2
4 Family matter Used when the conversation is related to the driver's family members	3	3
5 Argument Used when the participants disagree on the topic of conversation. Elements of anger should be present.	4	4
6 Disciplinary Used when discussion is about disciplinary matters between the parent (or other adult) and child. Disciplinary discussions between co-workers are classified as business related.	5	5
9 Other (specify) : Used when the nature of the conversation is other than specified by preceding codes. Specify the nature of the discussion.	6	6
88 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
99 Unknown Used when there is insufficient information to determine if the driver was conversing with another individual during the pre-crash phase and/or if there is insufficient information to establish the nature of the discussion.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Other non-driving activities**

Oracle Variable: DRIVER_ACTIVITY.OTHER_DRIVER_ACTIVITY   3343

Screen Name: Other non-driving activities

Form # - Name: 40 -

SAS Data Set:

SAS Variable:

Remarks:
This element value establishes other interior factors/events which resulted in driver distraction during the precrash phase.
The intent here is to identify factors which reduced/interfered with the driver's attention to the driving task.

Range:

Method: Fill all that apply

Element Attributes:	**Oracle Value**	**SAS Value**
1 No non-driving activities Used when the driver is not engaging in nor-driving activities during the precrash phase.	1	1
2 Looking at movement/actions of other occupants Used when the driver is distracted by other occupants in the vehicle. The specific intent is to identify instances when the driver is distracted by movements or actions initiated by these occupants. Distraction as a result of conversation is classified in the preceding variable.	2	2
3 Dialing/hanging up phone Used when the driver is distracted as a result of either dialing or hanging up a phone during the precrash phase. This element value is also used when the driver is adjusting phone controls or is attempting to retrieve voicemail messages.	3	3
4 Adjusting radio/CD player Used when the driver is distracted as a result of attempting to adjust sound system controls.	4	4
5 Adjusting other vehicle controls Used when the driver is distracted as a result of attempting to adjust the heat, vent, or air conditioning controls. This category also includes attempted adjustments to other OEM and after market controls. Electronic file data entries should be annotated to indicate the system involved and the attempted adjustment.	5	5
6 Retrieving object from floor and/or seat Used when the driver is attempting to retrieve an object from either indicated location while driving. The objects in this category include everything with the exception of items related to smoking or eating which are addressed in the other category.	6	6
7 Retrieving object from other location Used when the driver is attempting to retrieve an object from a location other than the floor or seat. Again, objects in this category include everything with the exception of items related to smoking or eating which are addressed in the other category.	7	7
8 Other (specify): Used when the driver is distracted by interior factors not described in preceding elements. Examples include smoking, eating, drinking, and reading related distractions. Specify the specific activity and how this activity distracted the driver.	8	8

Form Screen Name: Other non-driving activities

Oracle Variable: DRIVER_ACTIVITY.OTHER_DRIVER_ACTIVITY   3343

Element Attributes:	**Oracle Value**	**SAS Value**
8888 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
9999 Unknown Used when there is insufficient information to determine if the driver is distracted by interior factors.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Exterior factors**

Oracle Variable: EXTERIORFACTOR.EXTERIOR_FACTOR

3355

Screen Name: Exterior factors

Form # - Name: 41 -

SAS Data Set:

SAS Variable:

Remarks:

This element value documents the driver focusing on factors exterior to the vehicle. The intent here is to identify factors which influenced the driver's focus with respect to the driving task.

Range:

Method: Fill all that apply

	Element Attributes:	Oracle Value	SAS Value
1	No exterior factors	1	1
	Used when the driver is not distracted from the driving task by factors exterior to the vehicle.		
2	Looking at previous crash	2	2
	Used when the driver removes his/her focus from the driving task to look at a previous crash (i.e., "rubber-necking").		
3	Looking at approaching traffic	3	3
	Used when the driver removes his/her focus from the driving task to look at approaching traffic either in an adjoining lane or across a median area.		
4	Looking for street address	4	4
	Used when the driver removes his/her focus from the driving task to search for a street address (usually searching for a specific building number).		
5	Looking at outside person	5	5
	Used when the driver removes his/her focus from the driving task to look at a person who is exterior to this vehicle. The person can be a pedestrian, bicyclist, skater, or an occupant of another vehicle or even a person in a building.		
6	Looking at building	6	6
	Used when the driver removes his/her focus from the driving task to look at a building (usually as a result of seeing a feature of interest). This category is closely related to "sight seeing", but does not include individuals attempting to locate specific addresses.		
7	Unspecified outside focus	7	7
	Used when the driver removes his/her focus from the driving task to focus on something exterior to the vehicle, but there is insufficient information to determine the direction or the specific object that is being examined.		
8	Other (specify) :	8	8
	Used when the driver is distracted by something that is exterior to the vehicle and that is not adequately described in preceding elements. Specify the nature of the distraction.		
8888	No driver present	-8888	8888
	Used when there is no driver in the driver's seated position at the time of the crash.		
9999	Unknown	-9999	9999

Form Screen Name: **Exterior factors**

3355

Oracle Variable: EXTERIORFACTOR.EXTERIOR_FACTOR

Oracle Value	**SAS Value**

Element Attributes:

Used when there is insufficient information to determine if the driver is distracted by something that is exterior to the vehicle.

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Location of exterior factors with respect to driver**

Oracle Variable: EXTERIORFACTOR.EXTERIOR_FACTOR_LOCATION

3366

Screen Name: Location of exterior factors with respect to driver

Form # - Name: 42 -

SAS Data Set:

SAS Variable:

Remarks:
This variable locates the exterior factor relative to the driver position.

Range:

Method: Fill all that apply

Element Attributes:	Oracle Value	SAS Value
1 No exterior factors Used when the driver is not distracted from the driving task by factors exterior to the vehicle.	1	1
2 Forward Used when the distraction source is located forward of the driver's positon and is contained within the straight line prolongations of the two sides of the vehicle. See Figure 7.	2	2
3 Forward, left Used when the distraction source is located forward and to the left of the driver's position (i.e., contained within the sector defined by straight line prolongations of the left side of the vehicle and the front bumper of the vehicle). See Figure 7.	3	3
4 Forward, right Used when the distraction source is located forward and to the right of the driver's position (i.e., contained within the sector defined by straight line prolongations of the right side of the vehicle and the front bumper of the vehicle). See Figure 7.	4	4
5 Left Used when the distraction source is located to the left of the driver's position (i.e., contained within the sector, to the left of the vehicle that is defined by straight line prolongations of the front and rear bumpers of the vehicle). See Figure 7.	5	5
6 Right Used when the distraction source is located to the right of the driver's position (i.e., contained within the sector, to the right of the vehicle that is defined by straight line prolongations of the front and rear bumpers of the vehicle). See Figure 7.	6	6
7 Rearward Used when the distraction source is located rearward of the straight ine projection of the rear bumper. See Figure 7.	7	7
8 Other (specify) : Used when the driver is distracted by something that is exterior to the vehicle and the location is not adequately described in preceding elements. Specify the distraction source location.	8	8
8888 No driver present	-8888	8888

| **Form Screen Name:** | **Location of exterior factors with respect to driver** | **Driver Recognition Factors** | | 461 |

Oracle Variable: EXTERIORFACTOR.EXTERIOR_FACTOR_LOCATION 3366

		Oracle Value	SAS Value

Element Attributes:

Used when there is no driver in the driver's seated position at the time of the crash.

| 9999 | Unknown | -9999 | 9999 |

Used when there is insufficient information to determine if the driver is distracted by an exterior factor and when the location of the exterior factor cannot be determined.

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **If exterior source was located rearward of the driver, how did**

Oracle Variable: EXTERIORFACTOR.EXTERIOR_FACTOR_REAR_TRACK   3377

Screen Name: If exterior source was located rearward of the driver, how did the driver track it?

Form # - Name: 43 - (If applicable) If exterior source was located to your rear, how did you track it?

SAS Data Set:

SAS Variable:

Remarks:
  This element value establishes how the driver tracked the exterior item when this item is
  located behind the vehicle (i.e., code 'Rearward' in the preceding variable, 'External distraction').

Range:

Method: Fill a single item

Element Attributes:		Oracle Value	SAS Value
2	Turned head	1	1
	Used when the driver physically turns his/her head to track the exterior factor.		
3	Used rearview mirror	2	2
	Used when the driver looks into the rearview mirror to track the exterior factor.		
4	Used side mirror	3	3
	Used when the driver looks into a side mirror to track the exterior factor.		
8	Other (specify) :	4	4
	Used when the specific mechanism used by the driver to track the exterior factor is not described in preceding elements. Specify the tracking mechanism.		
8888	No driver present	-8888	8888
9997	Not applicable	-9997	9997
	Used when the driver is not looking rearward tracking factors exterior to the vehicle.		
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine if the driver was distracted by an exterior factor. This designation is also used if there is insufficient information to determine the specific tracking mechanism.		

Sources:
    RESEARCHER ASSESSMENT
    REVIEWER ASSESSMENT

Form Screen Name: Inadequate surveillance	**Driver Recognition Factors** 463

Oracle Variable: DRIVER_BEHAVIOR.SURVEILLANCE   3384

Screen Name: Inadequate surveillance

Form # - Name: 44 -

SAS Data Set:

SAS Variable:

Remarks:
 This element value establishes inadequate surveillance behavior on the part of the driver of this vehicle.

Range:

 Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No inadequate surveillance factors Used when inadequate surveillance behaviors are not associated with this driver.	1	1
2 Failed to look far enough ahead Used when the driver fails to check for obstacles/traffic located forward of this vehicle's location. The forward area in this instance is defined as shown in Figure 7 (i.e., code '1' area in Figure 7).	2	2
3 Failed to look either side ahead Used when the driver fails to check for obstacles/traffic located forward and to either side of the vehicle (i.e., code areas '2' and '3' in Figure 7.	3	3
4 Failed to look to side Used when the driver fails to check for obstacles/traffic located to either side of the vehicle (i.e., code areas '4' and '5' in Figure 7).	4	4
5 Failed to look to rear (mirrors) Used when the driver fails to check for obstacles/traffic to the rear of the vehicle. For truck configurations it is assumed that the check involves use of exterior side mirrors. The specific area of interest is code area 6 in Figure 7.	5	5
6 Failed to look-other (specify) : Used when the driver fails to check for obstacles/traffic in a location not described in preceding elements (e.g., up/down). Specify the location.	6	6
7 Looked, but did not see Used when the driver checks for approaching traffic, but does not see a specific vehicle that represents a threat to this vehicle. Legitimate cases in this category represent perceptual/processing errors. It is important to note that drivers will state they did not see an approaching vehicle when, in reality, they did not allow sufficient time to make a complete check (i.e., completed a perfunctory check for approaching traffic). Instances of this type should be classified in the Other category.	7	7
18 Other (specify) : Used when there is an inadequate surveillance mechanism that applies to this driver and that mechanism is not described in preceding elements. An example would be a driver who is in a hurry and performs a perfunctory check for cross/approaching traffic. Specify the mechanism and associated circumstances.	8	8
88 No driver present	-8888	8888

Form Screen Name: **Inadequate surveillance**

Oracle Variable: DRIVER_BEHAVIOR.SURVEILLANCE   3384

	Oracle Value	**SAS Value**

Element Attributes:

Used when there is no driver in the driver's seated position at the time of the crash.

99   Unknown   -9999   9999

Used when there is insufficient information to determine if an inadequate surveillance mechanism is associated with this crash.

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Other recognition factors**

Oracle Variable: DRIVER_BEHAVIOR.REC_FACTOR 3395

Screen Name: Other recognition factors

Form # - Name: 45 -

SAS Data Set:

SAS Variable:

Remarks:
This element value establishes the occurrence of other recognition factors related to this driver.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No other recognition factors Used when there are no other recognition factors associated with this driver.	1	1
2 Impending problem masked by traffic flow pattern Used when this driver does not see a problem/obstacle as a result of the traffic flow pattern (i.e., intervening vehicle blocks this driver's view).	2	2
3 Driver focused on extraneous vehicle Used when this driver focuses on a vehicle that is not in this driver's traffic stream (or in a potentially intersecting traffic stream). Therefore, the driver does not see a potential threat develop.	3	3
4 Other recognition error (specify) : Used when a recognition error occurs and this error is not described in preceding elements. Specify the nature of the error.	4	4
88 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
99 Unknown Used when there is insufficient information to determine if a recognition factor is present.	-9999	9999

Sources:
RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Traveling too fast for conditions**

Oracle Variable: DRIVER_BEHAVIOR.TRAVEL_FAST

3402

Screen Name: Traveling too fast for conditions

Form # - Name: 46 -

SAS Data Set:

SAS Variable:

Remarks:
This element value documents reasons given by the driver for traveling at his/her precrash travel speed. It is important to note that this variable is only relevant in the circumstance where the driver has been assessed as traveling too fast for conditions.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No traveling too fast for conditions factors Used when this driver is not traveling too fast for conditions	1	1
2 Keeping up with traffic Used when the driver indicates that he/she was merely moving at the same speed as the surrounding traffic flow.	2	2
3 Did not realize that caution was required Used when the driver indicates that he/she was unaware of the presence of a condition (i.e., black ice) that required the use of caution (typically in the form of a reduced travel speed).	3	3
4 Too fast, reason unknown Used when it has been determined (by outside sources, scene evidence) that the driver was traveling too fast, but it was not known why (most often used when the driver denies that he/she was traveling too fast).	4	4
5 Other (specify) : Used when the driver indicates that he/she was traveling at the selected travel speed for a reason that is not described in preceding elements. Specify the reason.	5	5
8888 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
9999 Unknown Used when there is insufficient information to determine the reason the driver was operating at the indicated precrash travel speed.	-9999	9999

Sources:
RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Following too closely**

Oracle Variable: DRIVER_BEHAVIOR.FOLLOW_CLOSE   3409

Screen Name: Following too closely

Form # - Name: 47 -

SAS Data Set:

SAS Variable:

Remarks:

   This element value documents reasons given by the driver for traveling with less than the recommended gap interval to traffic forward of the driver's position. If the lead vehicle had stopped under normal deceleration then Following too closely should never be coded. The attributes in this variable are hierarchical in nature, i.e. Rush hour, heavy traffic would be coded before Keeping up with traffic.

   In most of the driver education literature, the recommended gap time between vehicles is 2-6 seconds for good conditions, i.e. dry, clean road, good visibility, and daylight. Conditions other than these mean the following difference in time or distance in feet should be increased based on the difficulty of visibility, e.g. rain, fog, darkness, etc.
   The table below is provided to give some idea of the distance in feet between vehicles for the three and six second time intervals.

		Safe Following Distance in Feet	
Three-Second Rule Safe Interval Should Be>		3 seconds	6 seconds
Speed Distance Traveled For These Conditions>		Good	Marginal
25 m.p.h.	37 ft. per second	111 ft.	222 ft.
35 m.p.h.	52 ft. per second	166 ft.	312 ft.
45 m.p.h.	66 ft. per second	198 ft.	396 ft.
55 m.p.h.	81 ft. per second	243 ft.	486 ft.
65 m.p.h.	96 ft. per second	288 ft.	576 ft.
75 m.p.h.	111 ft. per second	333 ft.	666 ft.

Range:

Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	No following too closely factors. Used when the driver was not following too closely behind traffic forward of his/her position.	1	1
2	Rush hour, heavy traffic. Used when the driver indicates the he/she maintained a relatively short gap distance to forward vehicles as a result of heavy traffic congestion associated with rush hour traffic flow patterns.	2	2
3	Keeping up with traffic. Used when the driver indicates that his/her gap following distance is associated with keeping up with surrounding traffic.	3	3
4	Did not realize he/she was too close to forward vehicle. Used when the driver makes statements to this effect. This type of driver statement is generally reflective of a post-crash realization, by the following driver, that the gap following distance played a significant role in this crash.	4	4
5	Always drive at this gap distance. Used when the driver indicates that he/she routinely drives using the gap distance noted in the precrash phase.	5	5

Form Screen Name: **Following too closely**

Oracle Variable: DRIVER_BEHAVIOR.FOLLOW_CLOSE   3409

		Oracle Value	**SAS Value**
Element Attributes:			
6	Other (specify) :	6	6
	Used when the driver indicates a reason that is not described in preceding elements. Specify the reason the driver provided with respect to the precrash gap following distance.		
8888	No driver present	-8888	8888
	Used when there is no driver in the driver's seated position at the time of the crash.		
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine if the driver was following too closely and/or to determine the specific reason for the selected gap distance.		

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Misjudgment of gap distance to other vehicle or speed of**

Oracle Variable: DRIVER_BEHAVIOR.MISJUDGE_GAP_VEL   3417

Screen Name: Misjudgment of gap distance to other vehicle or speed of other vehicle

Form # - Name: 48 -

SAS Data Set:

SAS Variable:

Remarks:
　　This element value documents the involvement of a decision error in which the subject driver either misjudges the gap distance to the other vehicle or misjudges the speed of the other vehicle.

Range:

Method: Fill a single item

		Oracle Value	SAS Value
Element Attributes:			
1	No misjudgment factors	1	1
	Used when there are no misjudgment factors associated with this driver.		
2	Misjudgment of gap distance	2	2
	Used when the preponderance of evidence indicates that this driver misjudged the gap distance to the other vehicle.		
3	Misjudgment of velocity of other vehicle	3	3
	Used when the preponderance of evidence indicates that this driver misjudged the velocity of the other vehicle.		
4	Misjudgment of both factors	4	4
	Used when the preponderance of evidence indicates that this driver misjudged some aspect of both the gap distance to the other vehicle and the velocity of that vehicle.		
5	Other (specify) :	5	5
	Used when this driver misjudges a factor not described in preceding elements. An example would be a single vehicle crash in which the driver misjudges the gap distance to a fixed or moving object. Specify the specific situation involved.		
8888	No driver present	-8888	8888
	Used when there is no driver in the driver's seated position at the time of the crash.		
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine if this driver is associated with a decision error of this type.		

Sources:
　　　　RESEARCHER ASSESSMENT
　　　　REVIEWER ASSESSMENT

Oracle Variable: DRIVER_BEHAVIOR.VEH_APPR_DIREC   3424

Screen Name: Misjudged vehicle approaching from this driver's

Form # - Name: 49 -

SAS Data Set:

SAS Variable:

Remarks:

    This element value establishes the direction from which the other vehicle was approaching this driver's position

Range:

Method: Fill a single item

	Oracle Value	SAS Value
Element Attributes:		
1 No misjudgment factors	1	1
Used when there is no evidence that a decision factor of this type is involved.		
2 Left	2	2
Used when the other vehicle is approaching the crash site from this driver's left. This designation includes angular approaches that are between 90 and 119 degrees.		
3 Right	3	3
Used when the other vehicle is approaching the crash site from this driver's right. This designation includes angular approaches that are between 241 and 270 degrees.		
4 Forward direction (170-190 deg opposed)	4	4
Used when the other vehicle is approaching the crash site from a direction that is typically 180 degrees opposed to the subject vehicle's direction of motion. This designation also includes angle approaches (e.g., 170-190 degrees) from the forward direction which occur less frequently than 180 degree configuration. Approach trajectory separations in the 90 to 119 degree range are more accurately classified as Left and approach trajectory separations in 241 to 270 degree range are move accurately classified as Right .		
5 Left forward direction (120 - 169 deg opposed)	5	5
Used when the other vehicle is approaching the crash site from a direction that is between 120 and 169 degrees opposed to the subject vehicle's direction of motion.		
6 Right forward direction (191 - 240 deg opposed)	6	6
Used when the other vehicle is approaching the crash site from a direction that is between 191 and 240 degrees opposed to the subject vehicle's direction of motion.		
7 Rear	7	7
Used when the other vehicle is approaching the subject vehicle from the rear.		
8888 No driver present	-8888	8888
Used when there is no driver in the driver's seated position at the time of the crash.		
9999 Unknown	-9999	9999
Used when there is insufficient information to determine if this driver is associated with a decision error of this type.		

Oracle Variable: DRIVER_BEHAVIOR.VEH_APPR_DIREC   3424

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

| **Form Screen Name:** | **False assumption of other road user's actions** | **Driver Decision Factors** | 472 |

| **Oracle Variable**: | DRIVER_BEHAVIOR.FALSE_ASSUMPTION | 3434 |

Screen Name: False assumption of other road user's actions

Form # - Name: 50 -

SAS Data Set:

SAS Variable:

Remarks:

This element value identifies false assumptions on the part of this driver with respect to other driver's actions or intended actions.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No false assumption factors Used when a decision error of this type is not associated with this driver.	1	1
2 Assumed that other driver would merge without stopping Used when the driver assumes that a lead vehicle will continue to merge without stopping. This circumstance typically occurs on an entrance ramp where ramp traffic is attempting to merge with traffic in the through lanes.	2	2
3 Assumed that other driver would turn without stopping Used when the driver assumes that another vehicle will complete a turn without stopping. This circumstance typically occurs at an intersection/crossover, the subject driver is typically in a following vehicle, and the lead vehicle may be turning left or right. In a less frequently occurring circumstance the subject driver is the lead vehicle in an opposing traffic stream and the other vehicle is turning left.	3	3
4 Assumed that other driver would continue to proceed Used when the subject driver assumes the other vehicle will continue to execute an action that is underway. Turning and merging actions are excluded from this designation since they are covered in preceding elements.	4	4
5 Assumed that other driver would yield right-of-way Used when the subject driver assumes the other driver will yield the right-of-way. This situation occurs most frequently at intersections, but can include a variety of turning scenarios.	5	5
7 Other false assumption (specify) : Used when the driver makes a false assumption that is not described in preceding elements. Describe the assumption and the relationship of this assumption to the crash.	6	6
88 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
99 Unknown Used when there is insufficient information to determine if the driver made a false assumption.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Illegal maneuver**

   Oracle Variable: ILLEGALMANEUVER.ILLEGAL_MANEUVER   3443

   Screen Name: Illegal maneuver

   Form # - Name: 51 -

SAS Data Set:

SAS Variable:

Remarks:

   This element value documents gross illegal maneuvers initiated by this driver. The driver does not have to be formally charged with an offense by the investigating police agency. The single criterion is whether or not the driver initiated a maneuver of this type.

Range:

 Method: Fill all that apply

Element Attributes:	Oracle Value	SAS Value
1 No illegal maneuver factors Used when a decision error of this type is not associated with this driver.	1	1
2 Crossed full barrier lines while passing Used when the driver crosses full barrier lines to execute, or while executing, a passing maneuver.	2	2
3 Passed on right (drive off pavement to pass) Used when the driver drives off the travel lane(s) to pass on the right (i.e., driver moves on to shoulder area to execute the passing maneuver).	3	3
4 Turned from wrong lane Used when the driver executes a turn from the wrong lane (i.e., turns left from the right lane or turns right from the left lane of a multilane roadway).	4	4
5 Initiated illegal U-turn Used when the driver initiates a U-turn in an area where these turns are not permitted.	5	5
6 Failed to stop for TCD Used when the driver does not stop for a displayed red traffic signal phase or does not stop for a stop sign.	6	6
7 Drove wrong way on one-way road Used when the driver travels the wrong way on a one-way roadway.	7	7
8 Other illegal maneuver (specify) : Used when the driver initiates an illegal maneuver that is not described in preceding elements. An annotation is required to describe the maneuver. The failure to yield the right of way is not to be coded as an Illegal maneuver.	8	8
8888 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
9999 Unknown Used when there is insufficient information to determine if the driver has initiated an illegal maneuver.	-9999	9999

 Sources:

      RESEARCHER ASSESSMENT
      REVIEWER ASSESSMENT

Form Screen Name: **Driver's aggressive acts**

Oracle Variable: DRIVER_AGGRESSION.AGGRSV_ACT   1819

Screen Name: Driver's aggressive acts

Form # - Name: 52 - Did the driver exhibit any aggressive driving behaviors? If so, what?

SAS Data Set:

SAS Variable:

Remarks:

This element value documents aggressive driving behavior exhibited by the subject driver. Aggressive driving occurs when an individual commits a combination of moving traffic offenses so as to endanger other persons or property. Examples of aggressive driving include speeding (above the normal flow of traffic speed), constant lane changing, red light running and improper passing. To be considered aggressive driving, action of the driver must pose a serious safety risk to other road users. Aggressive driving acts do not include honking the horn, flashing lights or obscene gesturesunless accompanied by moving traffic offenses. Since these behaviors are not well defined in current literature, the Researcher has some latitude with respect to determining the occurrence of these behaviors and their specific relevance to each crash. Itis anticipated that many of these assessments will be derived from subjective evaluations (e.g., interview data).

Range:

Pick as many as applicable

Method: Fill all that apply

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name:	**Reasons for aggressive driving behavior**	**Driver Decision Factors**	475

Oracle Variable: DRIVER_AGGRESSION.AGGRSV_DRIVE_REASON   3466

Screen Name: Reasons for aggressive driving behavior

Form # - Name: 53 -

SAS Data Set:

SAS Variable:

Remarks:

    This element value establishes the reason for aggressive driving reported in the preceding variable.

Range:

Method: Fill all that apply

Element Attributes:	**Oracle Value**	**SAS Value**
1 No aggressive driving behaviors Used when a decision error of this type is not associated with this driver.	1	1

2   Anger
  Used when the subject driver engages in aggressive driving behavior as
  a result of anger. See note following element 3.
	2	2

3   Frustration
  Used when the subject driver engages in aggressive driving behavior as a
  result of frustration.
 	
  NOTE: Elements of both the anger response and frustration response will be
  involved with many aggressive driving behaviors. A simple hierarchy that
  should be used to assist the categorization effort is as follows:
 	
  Drivers typically become angry with respect to the actions of other drivers.
  Drivers typically exhibit a frustration response to situations or events (not with
  respect to specific drivers).
 	
  If the correct element is not apparent after working through the above
  hierarchy default to the Anger designation.
	3	3

4   Always drive this way
  Used when the driver indicates that the displayed driving behavior is his/her
  normal driving pattern. This situation is often noted with respect to driving
  patterns involving tailgating, weaving in and out of traffic and speeding. The
  association with speeding typically occurs at lower levels than are noted with
  the first two listed behaviors.
	4	4

8   Other (specify) :
  Used when the reason for the aggressive driving behavior displayed by this
  driver is not described in preceding elements (e.g., being in a hurry). Specify
  the reason.
	5	5

8888   No driver present
  Used when there is no driver in the driver's seated position at the time of the
  crash.
	-8888	8888

9997 Not applicable Used when it is unknown if the driver performed any aggressive driving acts	-9997	9997
9999 Unknown	-9999	9999

Form Screen Name:	**Reasons for aggressive driving behavior**	**Driver Decision Factors**	476

Oracle Variable: DRIVER_AGGRESSION.AGGRSV_DRIVE_REASON   3466

Oracle Value	**SAS Value**

Element Attributes:
Used when there is insufficient information to determine why this driver was driving aggressively.

Sources:
RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: Inadequate/Incorrect Evasive Action	**Driver Decision Factors** 477

Oracle Variable: DRIVER_BEHAVIOR.INADEQ_EVASIVE_ACTON   3454

Screen Name: Inadequate/Incorrect Evasive Action

Form # - Name: 54 -

SAS Data Set:

SAS Variable:

Remarks:

This element value establishes inadequate evasive actions on the part of this driver. This variable does not deal with legal requirements and the final assessment may be based on a subjective evaluation completed by the Researcher.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No inadequate evasive action factors Used when a decision error of this type is not associated with this driver.	1	1
2 Insufficient steering inputs Used when the driver could avoid the crash (or reduce the severity of the crash) by steering, but either does not steer or does not use sufficient steering input to achieve these objectives.	2	2
3 Insufficient braking inputs Used when the driver could avoid the crash (or reduce the severity of the crash) by braking, but either does not brake or does not use sufficient brake pedal pressure to achieve these objectives.	3	3
4 Combination of insufficient steering and braking inputs Used when the driver could avoid the crash (or reduce the severity of the crash) by a combination of steering and braking inputs, but does not achieve these objectives as a result of insufficient inputs.	4	4
5 Chose inappropriate/unsuccessful evasive action Used when this driver initiates an inappropriate evasive action with respect to achieving crash avoidance.	5	5
8 Other insufficient evasive action (specify) : Used when an evasive action, not described in preceding elements, could have achieved crash avoidance or crash severity reduction, but was not initiated to a sufficient degree to achieve these objectives. An annotation is required to specify the evasive action.	6	6
8888 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
9999 Unknown Used when there is insufficient information to determine if an evasive action is applicable to the circumstances of this crash and when there is insufficient information to determine if this driver's evasive action is inadequate.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Other decision factors**

Oracle Variable: DRIVER_BEHAVIOR.DECISION_FACTOR

Screen Name: Other decision factors

Form # - Name: 55 -

SAS Data Set:

SAS Variable:

Remarks:

    This element value establishes decision factors relevant to this crash that are not described in preceding variables

Range:

 Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 No other decision factors Used when a decision error of this type is not associated with this driver	1	1
2 Crossed with obstructed view Used when this driver attempts to cross an intersection or cross the roadway when his/her line of sight to approaching traffic is not clear. Typically, the view obstruction involves an intervening vehicle, but roadside appurtenances can also be involved.	2	2
3 Turned with obstructed view Used when this driver initiates a turn (typically left turn) at an intersection or into/out of a driveway, when his/her sightline to approaching traffic is not clear. Typically, the view obstruction involves an intervening vehicle, but roadside appurtenances can also be involved.	3	3
4 Stopped when not required Used when the driver stops in a traffic stream when there is no reason to stop (i.e., traffic is moving in an unrestricted manner).	4	4
5 Proceeded with insufficient clearance Used when the driver accelerates from a stopped position without having an adequate gap interval to traffic forward of his/her position. This designation can also be used in circumstances where there are insufficient lateral clearances.	5	5
6 Turned without signaling Used when the driver initiates a turn without activating the vehicle turn signals and/or using hand signals.	6	6
7 Other decision error (specify) : Used when the driver makes a decision error that is not described in preceding elements. An annotation is required to specify the nature of the decision error.	7	7
8888 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
9999 Unknown Used when there is insufficient information to determine if the driver made a decision error as described in preceding elements.	-9999	9999

 Sources:

       RESEARCHER ASSESSMENT
       REVIEWER ASSESSMENT

Form Screen Name: **Performance errors**	**Driver Performance Factors** 479

Oracle Variable: DRIVERPERFORMANCE.DRIV_PERFORM_ERROR   6104

Screen Name: Performance errors

Form # - Name: 56 -

SAS Data Set:

SAS Variable:

Remarks:

    This element establishes performance errors on the part of this driver.

Range:

Method: Fill all that apply

Element Attributes:	Oracle Value	SAS Value
1 No performance errors Used when no performance errors are noted for this driver.	1	1
2 Panic/freezing Used when this driver fails to initiate evasive action as a result of panic/freezing. Panic refers to the irrational and impulsive actions that obviously do not assist the effort of crash avoidance (e.g. driver taking hands off the steering wheel and screaming). Freezing refers to drivers who cannot move or cannot think of an evasive maneuver and, therefore, do nothing.	2	2
3 Overcompensation Used when this driver overreacts to a stuation requiring some adjustment in the velocity or path of the subject vehicle. A typical example is a driver running partly off the road to the right and overcorrecting to the left into oncoming traffic.	3	3
4 Poor directional control (e.g. failure to control vehicle with skill ordinarily Used when this driver fails to maintain the degree of vehicle control ordinarily expected of a good driver. It is not intended for situations when a high degree of skill is required. This element is probably most applicable to unskilled, novice drivers or older drivers with degraded skills. In situations where there is evidence that the driver is not maintaining control as a result of inattention or distraction, those codes should be used.	4	4
5 Other (specify) : Used when the driver commits a performance error that is not described in the preceding attributes. An annotation is required to specify the nature of the error.	5	5
8888 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
9999 Unknown Used when it is evident that a performance error has been committed, but the precise nature of the error cannot be determined	-9999	9999

Sources:

       RESEARCHER ASSESSMENT
       REVIEWER ASSESSMENT

Form Screen Name: **Was the driver upset prior to crash**

Oracle Variable: DRIVER_BEHAVIOR.DRIVER_UPSET

3484

Screen Name: Was the driver upset prior to crash

Form # - Name: 57 -

SAS Data Set:

SAS Variable:

Remarks:
This element value establishes whether or not the driver was upset prior to the crash and the specific reason, where applicable, associated with this emotional state.

Range:

Method: Fill a single item

Element Attributes:		Oracle Value	SAS Value
1	No	1	1
2	Yes	2	2
8888	No driver present	-8888	8888
	Used when there is no driver in the driver's seated position at the time of the crash.		
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine if the driver was upset prior to the crash.		

Sources:
RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Did the driver experience work-related stress/pressure**	**Driver Emotional Factors** 481

Oracle Variable: DRIVER_BEHAVIOR.WORK_STRESS

3734

Screen Name: Did the driver experience work-related stress/pressure

Form # - Name: 58 - (If applicable) Did you experience work related stress?

SAS Data Set:

SAS Variable:

Remarks:

This element establishes whether or not the driver had been experiencing work-related stress in the days leading up to the crash.

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 No employer relation factors Used when there are no work-related stress factors	1	1
2 Required to work extended work shifts Used when the employer schedules shifts in a manner that requires extended work shifts to complete. This circumstance requires the driver to work while fatigued.	2	2
3 Required to work rotating shift schedule Used when the carrier/employer requires the driver to work rotating shift schedules with an associated rotating sleep pattern.	3	3
4 Required to fill in for other workers Used when the carrier/employer requires the driver to fill-in (i.e., perform extra work) when other workers are absent.	4	4
5 Learning new position Used when the driver is under pressure as a result of learning a new position in his/her primary work place. This designation applies primarily to non-truck drivers, although drivers on occasion can also be learning a new work-related position while maintaining their driving status.	5	5
6 Tight/unrealistic production/delivery schedule Used when the driver is under time-related pressures associated with production/delivery schedules.	6	6
7 Adversarial work relationship (management) Used when the driver indicates that he/she has an adversarial work relationship with the management of his/her employer.	7	7
8 Adversarial work relationship (fellow workers) Used when this driver indicates that he/she has an adversarial work relationship with fellow workers.	8	8
9 Other (specify) : Used when the carrier/employer requires the driver to do something that is likely to result in the driver operating while fatigued. Specify the factor and the effect of this factor on the driver.	9	9
8888 No driver present Used when there is no driver present in the driver's seated position at the time of the crash.	-8888	8888
9999 Unknown	-9999	9999

Form Screen Name: **Did the driver experience work-related stress/pressure**

Oracle Variable: DRIVER_BEHAVIOR.WORK_STRESS   3734

	Oracle Value	SAS Value

Element Attributes:
Used when there is insufficient information to determine if the carrier/employer pressures the driver.

Sources:
RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Was driver in a hurry**

Oracle Variable: DRIVER_BEHAVIOR.IN_A_HURRY   1749

Screen Name: Was driver in a hurry

Form # - Name: 59 - Were you in a hurry? If so, why?

SAS Data Set:

SAS Variable:

Remarks:

This element value establishes if the driver was in a hurry prior to crash occurrence. On the Driver Interview Form, code the response of the interviewee. During the interview, the Researcher should probe the driver to find out if this is his/her normal driving behavior. In coding the PAF, while the assessment may be subjective, where feasible, assessments of this type should be reflected in the driver's precrash drving behavior (i.e., speeding, sudden starts/stops, weaving in and out of traffic, etc.).

Range:

Method: Fill a single item

Element Attributes:	**Oracle Value**	**SAS Value**
1 Not in a hurry	1	1
Used when there is no evidence that the driver was in a hurry prior to the crash.		
2 Due to work related delivery schedule	4	4
Used when the driver is in a hurry due to a very tight delivery schedule that has been established by the employer.		
3 Late for business appointment	3	3
Used when the driver is in a hurry because he/she is late for a business appointment.		
4 Late for social appointment	5	5
Used when the driver is in a hurry because he/she is late for a social appointment.		
5 Late for start of work shift/start of school classes	2	2
Used when the driver is in a hurry because he/she is late for the start of a work shift or the start of a school class.		
6 Normal driving pattern	6	6
Used when the driver is in a hurry, but being in a hurry is the normal driving pattern for this driver.		
8 Other (specify) :	7	7
Used when the driver is in a hurry prior to the crash, but the reason is not described in preceding elements. Specify the reason.		
8888 No driver present	-8888	8888
Used when there is no driver in the driver's seated position at the time of the crash.		
9999 Unknown	-9999	9999
Used when there is insufficient information to determine if the driver was in a hurry prior to the crash.		

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Other emotional factors**

Oracle Variable: DRIVER_BEHAVIOR.EMOT_FACTOR   3543

Screen Name: Other emotional factors

Form # - Name: 60 - Other emotional factors

SAS Data Set:

SAS Variable:

Remarks:

This element value establishes if other emotional factors are relevant to this driver's precrash behavior. Other types of emotional factors include the driver being clinically depressed, diagnosed with a psychosis or some other emotional disorder.

Range:

Method: Fill a single item

Element Attributes:		**Oracle Value**	**SAS Value**
1	Yes	1	1
	Used when this driver has Other emotional factors.		
2	No	2	2
	Used when this driver does not have any additional Other emotional factors		
8888	No driver present	-8888	8888
	Used when there is no driver in the driver's seated position at the time of the crash.		
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine if other emotional factors are relevant to this driver.		

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT
MEDICAL RECORDS

Form Screen Name:	**Recent experience driving this vehicle**	**Driver Experience Factors**

Oracle Variable: DRIVER_BEHAVIOR.RECENT_EXP_THIS_VEHICLE   1130

Screen Name: Recent experience driving this vehicle

Form # - Name: 61 - How many times have you driven this vehicle in the last three months?

SAS Data Set:

SAS Variable:

Remarks:

    This element value establishes driver familiarity with the vehicle being operated at the time of the crash.

Range:

Method: Fill a single item

Element Attributes:	Oracle Value	SAS Value
1 More than 10 times in the past three months Used when the driver operates the vehicle at the indicated frequency level.	1	1
2 6-10 times in the last three months Used when the driver has operated the vehicle on preceding occasions, but not more than 10 times in the past three months.	2	2
3 2-5 times in the last three months Used when the driver has operated the vehicle on preceding occasions, but not more than 5 times in the past three months.	3	3
4 Less than 2 times in the past three months Used when the driver has driven this specific vehicle less than 2 times in the past three months.	4	4
5 First time driving this vehicle Used when this is the first time the driver has operated this vehicle in its intended operational mode. This circumstance includes situations where the driver has completed one preceding test drive to familiarize him/her with operational characteristics of the vehicle.	5	5
8888 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
9999 Unknown Used when there is insufficient information to establish vehicle experience factors.	-9999	9999

Sources:

        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name: **Frequency of driving road**

Oracle Variable: DRIVER_BEHAVIOR.THIS_ROUTE_FREQUENCY   1112

Screen Name: Frequency of driving road

Form # - Name: 62 - How often do you drive on this roadway?

SAS Data Set:

SAS Variable:

Remarks:
   This element value establishes the driver's familiarity with the approach to the crash site.

Range:

Method: Fill a single item

Element Attributes:		Oracle Value	SAS Value
1	Daily	1	1
	Used when the driver travels on this roadway at least four times per week.		
2	Weekly	2	2
	Used when the driver travels on this roadway approximately once per week.		
3	Several times a month	3	3
	Used when the driver travels on this roadway two to three times per month.		
4	Monthly	4	4
	Used when the driver travels on this roadway approximately once per month		
5	Rarely	5	5
	Used when the driver travels on this roadway less than eight times per year, or less than once per month.		
6	First time on road	6	6
	Used when this is the first time the driver has operated a vehicle on this roadway.		
7	Other (specify) :	7	7
	Used when the driver travels on this roadway at a frequency level that is not described in preceding elements. Specify the frequency level.		
8888	No driver present	-8888	8888
9999	Unknown	-9999	9999

Sources:
      RESEARCHER ASSESSMENT
      REVIEWER ASSESSMENT

Form Screen Name: Other driver related experience factors	**Driver Experience Factors** 487

Oracle Variable: OTHER_EXPFACTOR.OTHER_EXP_FACTOR   3527

Screen Name: Other driver related experience factors

Form # - Name: 63 -

SAS Data Set:

SAS Variable:

Remarks:

This element value establishes the presence of other experience/exposure factors that may be relevant to the crash

Range:

Method: Fill all that apply

Element Attributes:	Oracle Value	SAS Value
1 No other factor types Used when there is no evidence that experience/exposure factors of this type are relevant to this driver.	1	1
2 Uncomfortable with surrounding traffic densities Used when the driver is uncomfortable with surrounding traffic densities. In this circumstance the densities are usually very high as might be associated with rush hour traffic.	2	2
3 Uncomfortable with general traffic speeds Used when the driver is uncomfortable with the general speed of surrounding traffic. The discomfort in this circumstance is typically associated with the driver feeling that surrounding traffic is moving too fast.	3	3
4 Uncomfortable with general traffic flow (specify) : Used when the driver is uncomfortable with the general flow of surrounding traffic. Typically this is expressed as a feeling that traffic is starting/stopping suddenly. Other conditions, however, also apply. Specify the problem as expressed by this driver.	4	4
5 Uncomfortable with some aspect of vehicle/load (specify) : Used when the driver is uncomfortable with either the vehicle or load. Specify the problem as expressed by this driver.	5	5
6 Inexperienced driver Used when the driver has had a lack of training or is inexperienced.	6	6
7 Other (specify) : Used when the driver is uncomfortable with an aspect of the traffic pattern that is not described in preceding elements. Specify the condition and specific characteristics which made this driver uncomfortable.	7	7
8888 No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
9999 Unknown Used when there is insufficient information to determine if experience/exposure factors of this type are relevant to the subject driver.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Vehicle condition related factors**

Oracle Variable: VEH_CONDFACTOR.VEH_COND_RELAT_FACTOR

3558

Screen Name: Vehicle condition related factors

Form # - Name: 64 -

SAS Data Set:

SAS Variable:

Remarks:

This element value establishes vehicle conditions that may be relevant to crash occurrence. Select and enter up to four separate conditions. The other designation may be selected and entered multiple times. Specify the associated vehicle condition for each entry.

Range:

Method: Fill all that apply

Element Attributes:	Oracle Value	SAS Value
1 No vehicle related factors Used when there is no evdence that a vehicle related condition is relevant to this crash.	1	1
2 View obstruction - related to load Used when the driver experiences a view obstruction that is related to the vehicle's load. To select this attribute, the cargo must block the driver's view of at least one direction from the driver's seat. An example is a load of balloons which blocks the driver's view of the right rear and rear windows of the vehicle.	2	2
3 View obstruction - related to vehicle design Used when the driver experiences a view obstruction that is related to vehicle design (e.g., view blocked by right upper A-pillar).	3	3
4 View obstruction - related to other Used when the driver experiences a view obstruction that is associated with a factor not described in preceding elements. Annotate electronic file entries to indicate the nature of this factor.	4	4
5 Tire/wheel deficiency Used when the vehicle experiences a tire deficiency/malfunction (e.g., blowout, airout, etc.) during the precrash phase.	5	5
6 Braking system deficiency Used when the vehicle experiences a braking system deficiency/malfunction during the precrash phase.	6	6
7 Engine deficiency Used when the vehicle experiences an engine related problem during the precrash phase. Examples of engine related problems include stalling, missing, and throttle problems.	7	7
8 Transmission deficiency Used when the vehicle experiences a transmission deficiency/malfunction during the precrash phase.	8	8
9 Suspension deficiency Used when any suspension component(shock absorber, strut, etc) is relevant or contributes to a loss of stability or control in the critical precrash envelope of the crash.	9	9
10 Lighting deficiency	10	10

Form Screen Name: **Vehicle condition related factors**

Vehicle Related Factors

  Oracle Variable: VEH_CONDFACTOR.VEH_COND_RELAT_FACTOR

3558

		Oracle Value	SAS Value
Element Attributes:			
	Used when any lighting component (headlights, taillights etc) is relevant or contributes to a an event in the critical precrash envelope of the crash.		
11	Steering deficiency	11	11
	Used when any steering component deficiency/malfunction is relevant or contributes to a an event in the critical precrash envelope of the crash.		
8888	No driver present	-8888	8888
	Used when there is no driver present in the driver's seat of the vehicle.		
9999	Unknown	-9999	9999
	Used when there is insufficient information to determine if there is a vehicle condition that is relevant to crash occurrence.		

  Sources:

        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name: **Traffic flow interruption factors**	**Highway Related Factors** 490

Oracle Variable: FLOWINTERRUPTFACTOR.FLOW_INTERRUPT_FACTOR   3537

Screen Name: Traffic flow interruption factors

Form # - Name: 65 -

SAS Data Set:

SAS Variable:

Remarks:
  This element value establishes the presence of traffic flow interruption factors which may have a bearing on driver performance/crash occurrence. Up to four factors may be selected and entered.

Range:

 Method: Fill all that apply

Element Attributes:	**Oracle Value**	**SAS Value**
1 No traffic flow factors	1	1
Used when there are no traffic flow factors relevant to the crash.		
2 Previous crash nearby	2	2
Used when traffic flow at the crash site is interrupted by a previous crash located near this site.		
3 Construction work zone	3	3
Used when traffic flow is interrupted as a result of the crash site being located in a construction work zone.		
4 Emergency vehicle approaching	4	4
Used when traffic flow at the crash site is interrupted as a result of an emergency vehicle approaching from either direction.		
5 Rush hour congestion	5	5
Used when traffic flow at the crash site is interrupted as a result of rush hour traffic congestion.		
6 Other (specify) :	6	6
Used when traffic flow at the crash site is interrupted as a result of a factor not described in preceding elements. Describe the reason for the interruption.		
9999 Unknown	-9999	9999
Used when there is insufficient information to determine if there is a traffic flow interruption that is relevant to this crash.		

 Sources:
        RESEARCHER ASSESSMENT
        REVIEWER ASSESSMENT

Form Screen Name:	Roadway related factors	**Highway Related Factors**	491

Oracle Variable: ROAD_RELATEDFACTOR.ROAD_RELATED_FACTOR — 3569

Screen Name: Roadway related factors

Form # - Name: 66 -

SAS Data Set:

SAS Variable:

Remarks:

Range:

Method: Fill all that apply

Element Attributes:	**Oracle Value**	**SAS Value**
1 No roadway related factors Used when there are no roadway related factors relevant to this crash.	1	1
2 Traffic signs/signal missing Used when traffic signs/signals have been removed from this designated location and are not physically present. The removal can be associated with either a repair function or vandalism.	2	2
3 Roadway view obstructions including factors or devices like signal boxes Used when there is a view obstruction associated with roadway design including such added devices as signal boxes, signal light support poles, guardrails, and crash cushions.	3	3
4 View obstructed by other vehicle Used when the driver's view is obstructed by another vehicle.	4	4
5 Roadway geometry (crossover) Used when roadway geometry, in the form of a crossover, is relevant to this crash.	5	5
6 Roadway geometry (curve) Used when roadway geometry, in the form of a curve, is relevant to this crash. If the crash site is located in a curve or is associated with a curve, record the radius of curvature. This value is determined as follows: $R = C(C)/8m + m/2$ where R = Radius of curvature C = chord length, and m = value of middle ordinate. These measurements are provided in the Researcher's measurement log and included on the scene diagram.	6	6
7 Lane delineation problem (not present, worn, etc.) Used when this driver encounters difficulty as a result of lane delineation. The delineation markings in this circumstance may not be present, may be worn (i.e., reduced visibility), or may be covered in some manner (i.e., gravel, debris, etc.).	7	8
8 Narrow shoulders Used when this driver experiences a problem as a result of the shoulder which is not sufficiently wide. While circumstances will vary depending on location, shoulder width should be less than 4.9 feet (1.5 meters) to qualify for this designation.	8	9
9 Narrow road	9	9

Form Screen Name: **Roadway related factors**

Oracle Variable: ROAD_RELATEDFACTOR.ROAD_RELATED_FACTOR

3569

		Oracle Value	SAS Value
Element Attributes:	Used when this driver experiences a problem as a result of insufficient roadway width. While circumstances will vary depending on the type of roadway, two lane roadways should be less than 20 feet (6.1 meters) in width to qualify for this designation.		
10	Ramp speed Used when the posted ramp entrance/exit speed is inappropriate. This includes circumstances where the posted speed is adequate for one class of vehicle, but is too high for another class of vehicle (e.g., adequate for automobiles, but too high for large trucks).	10	10
11	Roadway condition (potholes, deteriorated road edges, etc.) Used when the driver encounters a problem as a result of an roadway maintenance condition. Specific areas of concern include potholes, deteriorated/broken road edges, washboard areas, and depression where a localized area of the surface has sunk several inches or more.	11	11
12	Wet Roads Use this attribute when the roads are wet from rain or other water source. If the rain had just started and the road was slick due to the road oil coming to the surface code Slick surface instead. The road must be well drained for this variable. If there is standing water of 1/4 inch or more, then the Road under water attribute should be used.	12	12
13	Road under water Used for the circumstance where at least one travel lane is completely covered with water. The depth of the water must be greater that 1/4 of one inch.	13	13
14	Slick surface (low friction value due to icy condition, loose debris, or any other Used when the driver encounters a low friction surface most commonly associated with an icy condition. There are several other circumstances which can also be associated with a pronounced reduction of friction values. These include loose gravel/sand spread over a paved surface and oil build-ups. Wet surfaces are not included in this designation unless the moisture adds to an existing condition such as an oil build-up.	14	14
15	Road washed out Used when a portion of the roadway collapses/washes away as a result of exposure to running water.	15	15
16	Other roadway problem (specify) : Used when the driver encounters a roadway problem that is not described in preceding elements. Specify the nature of this problem.	16	16
8888	No driver present Used when there is no driver in the driver's seated position at the time of the crash.	-8888	8888
9999	Unknown Used when there is insufficient information to determine if a roadway related factor is relevant to this crash.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Sight line restrictions**

Oracle Variable: PRECRASH.SIGHT_LINE_RESTRICTION   388

Screen Name: Sight line restrictions

Form # - Name: 67 - Was your sight line to the vehicle clear? If not, what was blocking it?

SAS Data Set:

SAS Variable:

Remarks:
>   This element value establishes the driver's sight line to the other vehicle in terms of being clear or being obsructed in some manner.

Range:

Method: Fill a single item

	Oracle Value	SAS Value
Element Attributes:		
1 No sight restrictions	1	1
Used when the driver's sight line to the other vehicle(s) is not obstructed/blocked by features in the environment.		
2 Vehicle	2	2
Used when the driver's sight line to the other vehicle is obstructed by a non-contact vehicle located between the driver's vehicle and the other vehicle. The vehicle may be stationary or moving. The single criteria is "Did the vehicle cause a view obstruction for this driver?.		
3 Building	3	3
Used when the driver's sight line to the other vehicle is obstructed by a roadside building. Annotate the form and database as to nature and location of this obstruction.		
4 Shrubbery	4	4
Used when the driver's sight line to the other vehicle is obstructed by a roadside shrubbery. These obstructions can be naturally occurring (e.g., trees, shrubs, tall grass, hedge, etc.). Annotate the form and database as to the nature and location of this obstruction.		
9999 Unknown	-9999	9999
Used when there is insufficient information to determine if the driver's view to the other vehicle is clear.		

Sources:
>   RESEARCHER ASSESSMENT
>   REVIEWER ASSESSMENT

Form Screen Name: **Atmospheric condition**

Oracle Variable: PRECRASH.ATMOSPHERICCONDITION

172

Screen Name: Atmospheric condition

Form # - Name: 68 - What was the weather like at the time of the crash? Were there any adverse atmospheric conditions?

SAS Data Set:

SAS Variable:

Remarks:

    Code all atmospheric conditions present for this driver. Each driver may experience different conditions in the crash. If applicable, wind velocity may be obtained fromthe National Weather Service internet site.

Range:

Method: Fill all that apply

Element Attributes:	Oracle Value	SAS Value
1 Clear--No adverse conditions Used when no meteorological conditions present at time of the crash which affected visibility or road surface.	1	1
2 Cloudy Used when the sky is cloud covered, reducing the ambient light	2	2
3 Snow Used when the precipitation falling at the time of the crash is predominately in the form of translucent ice crystals originating in the upper atmosphere as frozen particles of water vapor. Accumulation is not necessary to select this attribute.	3	3
4 Fog, Smog, Smoke Used when condensed water vapor, in cloud-like masses, is close to the ground limiting visibility at the time of the crash scene. This attribute is also used for heavy smoke or smog presence. Heavy is defined as enough to limit visibility.	4	4
5 Rain Used when the precipitation falling at the time of the crash is predominately in the form of water droplets	5	5
6 Sleet, Hail (Freezing drizzle or rain) Used when the precipitation meets the definition of sleet or hail. Sleet forms in the winter as raindrops freeze on their descent toward the ground. Since the drops are not bounced up and down inside the cloud, sleet cannot grow in size like hail, and typically reaches the ground as small pellets of ice. Hail typically forms in violent thunderstorms when raindrops can accumulate many layers of ice while bouncing up and down within the storm. This can result in large hailstones. Hail forms from thunderstorms, while sleet forms from winter storms.	6	6
7 Blowing Snow Used when the precipitation falling at the time of the crash is predominately in the form of translucent ice crystals originating in the upper atmosphere as frozen particles of water vapor. There must be significant wind at the time to select this attribute. Accumulation is not necessary to select this attribute.	7	7
8 Severe crosswinds	8	8

		Oracle Value	SAS Value
Form Screen Name:	**Atmospheric condition**	**Weather Related Factors**	495
Oracle Variable:	PRECRASH.ATMOSPHERICCONDITION	172	

Element Attributes:

Used when a wind gust blowing at an angle to the path of the vehicle occurs prior to the crash. Straight on headwinds and tailwinds should not be used to select this attribute.

		Oracle Value	SAS Value
9	Other (specify) :	9	9

Used when there is a relevant weather related factor that is not described in preceding elements. Specify the nature of this factor.

8888	No driver present	-8888	8888

Used when there is no driver in the driver's position at the time of the crash.

9999	Unknown	-9999	9999

Used when there is insufficient information to determine what weather conditions were present at the time of the crash.

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Form Screen Name: **Other environmental crash factors**

Oracle Variable: OTHER_ENVIRONFACTOR.OTHER_ENVIRON_FACTOR

3588

Screen Name: Other environmental crash factors

Form # - Name: 69 -

SAS Data Set:

SAS Variable:

Remarks:

This element value establishes the presence of a range of additional environmental factors that may have a bearing on crash occurrence. Select and enter up to four elements that are relevant to this crash.

Range:

Method: Fill all that apply

Element Attributes:	**Oracle Value**	**SAS Value**
1 No other factors Used when there is no evidence that factors of this type are relevant to the crash.	1	1
2 Sun glare Used when the driver's view of the roadway and environs is obscured by sun glare.	2	2
3 Headlight glare Used when the driver's view of the other vehicle or environment is obscured by headlight glare.	3	3
4 Blowing debris Used when this driver is exposed to some form of blowing debris which obscures view of environment or other vehicles. Examples include paper, cardboard boxes, and tree limbs.	4	4
5 Smoke Used when the driver's view of environment or other vehicles is obscured by the presence of smoke (e.g., smoke from a grass fire, house fire, or forest fire).	5	5
6 Other sudden change in ambient conditions Used when this driver's view of environment or other vehicles is obscured by something other than the conditions specifically noted in this variable. Specify the nature of this condition.	6	6
8888 No driver present Used when there is no driver present at the time of the crash.	-8888	8888
9999 Unknown Used when there is insufficient information to determine if environmental factors caused an obscuring of the driver's view of the roadway or environs.	-9999	9999

Sources:

RESEARCHER ASSESSMENT
REVIEWER ASSESSMENT

Makes & Models

ACURA

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        INTEGRA

        LEGEND

        MDX

        NSX

        OTHER AUTOMOBILE

        OTHER LIGHT TRUCK

        RL

        RSX

        SLX

        TL

        TSX

        UNKNOWN AUTOMOBILE

        UNKNOWN TYPE LIGHT TRUCK

        UNKNOWN VEHICLE

        VIGOR

ALFA ROMEO

        164

        GTV-6

        OTHER AUTOMOBILE

        SPIDER

        SPORTS SEDAN

        SPRINT SPECIAL

        UNKNOWN AUTOMOBILE

        UNKNOWN VEHICLE

AM GENERAL

        BUS - REAR ENGINE/FLAT FRONT

        DISPATCHER

        DISPATCHER

        HUMMER

        HUMMER H3

        MEDIUM/HEAVY TRUCK

        OTHER BUS

        OTHER LIGHT TRUCK

        OTHER MEDIUM/HEAVY TRUCK

        UNK TYPE TRUCK (LIGHT/MED/HEAVY)

        UNKNOWN BUS TYPE

        UNKNOWN LIGHT TRUCK

        UNKNOWN MEDIUM/HEAVY TRUCK

        UNKNOWN VEHICLE

AMC/AMERICAN MOTORS

        AMBASSADOR

        AMX

AMC/AMERICAN MOTORS

    EAGLE

    EAGLE SX-4

    HORNET/CONCORD

    JAVELIN

    OTHER AUTOMOBILE

    PACER

    RAMBLER/AMERICAN

    REBEL/MATADOR

    SPIRIT/GREMLIN

    UNKNOWN AUTOMOBILE

    UNKNOWN VEHICLE

ASTON MARTIN

    LAGONDA

    OTHER AUTOMOBILE

    SALOON

    UNKNOWN AUTOMOBILE

    VANTAGE

    VOLANTE

AUDI

    100/A6

    200

    4000

    5000

    80/90

    A3

    A4

    A8

    ALLROAD

    CABRIOLET

    COUPE QUATTRO

    FOX

    OTHER AUTOMOBILE

    S4/S6

    S8

    SUPER 90

    TT

    UNKNOWN AUTOMOBILE

    UNKNOWN VEHICLE

    V8 QUATTRO

AUSTIN / AUSTIN HEALEY

    AMERICA

    HEALEY SPRITE

    HEALY 3000

    MARINA

    MINI

    OTHER AUTOMOBILE

AUSTIN / AUSTIN HEALEY

    UNKNOWN AUTOMOBILE

    UNKNOWN VEHICLE

AUTO-UNION-DKW

    MEDIUM/HEAVY - CBE

    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY - COE/HIGH ENTRY

    MEDIUM/HEAVY - COE/LOW ENTRY

    MEDIUM/HEAVY - OTHER

    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION

    MEDIUM/HEAVY BASED MOTORHOME

AUTOCAR

    MEDIUM/HEAVY - CBE

    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY - COE/HIGH ENTRY

    MEDIUM/HEAVY - COE/LOW ENTRY

    MEDIUM/HEAVY - COE/LOW ENTRY

    MEDIUM/HEAVY - OTHER

    MEDIUM/HEAVY - UNKOWN ENGINE LOCATION

    MEDIUM/HEAVY BASED MOTORHOME

AVANTI

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

BERTONE

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

BMW

    1600, 2002

    3 SERIES

    5 SERIES

    6 SERIES

    7 SERIES

    8 SERIES

    BAVARIA SEDAN

    COUPE

    MOTORCYCLE (000-050CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (125-349CC)

    MOTORCYCLE (350-449CC)

    MOTORCYCLE (450-749CC)

    MOTORCYCLE (750CC-OVER)

    MOTORCYCLE (UNKNOWN CC)

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN MOTORED CYCLE

    UNKNOWN VEHICLE

BMW

    X3

    X5

    Z3

    Z4

    Z8

BRICKLIN

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

BROCKWAY

    MEDIUM/HEAVE - COE/LOW ENTRY

    MEDIUM/HEAVY - CBE

    MEDIUM/HEAVY - COE HIGH ENTRY

    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY - OTHER

    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION

    MEDIUM/HEAVY TRUCK BASED MOTORHOME

    UNKNOWN MEDIUM/HEAVY TRUCK

BSA

    MOTORCYCLE (000-050CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (125-349CC)

    MOTORCYCLE (350-449CC)

    MOTORCYCLE (450-749CC)

    MOTORCYCLE (750CC-OVER)

    MOTORCYCLE (UNKNOWN CC)

    OTHER MOTORED CYCLE

    UNKNOWN MOTORED CYCLE

BUELL

    MOTORCYCLE (000-051CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (125-349CC)

    MOTORCYCLE (350-449CC)

    MOTORCYCLE (450-749CC)

    MOTORCYCLE (750CC OR GREATER)

    MOTORCYCLE (UNKNOWN CC)

    OTHER MOTORED CYCLE

    UNKNOWN MOTORED CYCLE

BUICK

    APOLLO/SKYLARK (73-76)

    CENTURY

    ELECTRA/ELECTRA 225/PARK AVENUE (91-ON)

    LACROSSE

    LESABRE/CENTURION/WILDCAT

    OPEL GT

    OPEL ISUZU

    OPEL KADETT

    OPEL MANTA

BUICK

    OTHER AUTOMOBILE
    OTHER LIGHT TRUCK
    RAINIER
    REATTA
    REGAL
    REGAL (FWD)
    RENDEZVOUS
    RIVIERA
    ROADMASTER
    SKYHAWK
    SKYLARK (76-85)
    SOMERSET(85-87)/SKYLARK(86-ON)
    SPECIAL/SKYLARK (thru 1972)
    TERRAZA
    UNKNOWN AUTOMOBILE
    UNKNOWN LIGHT TRUCK
    UNKNOWN VEHICLE

CADILLAC

    ALLANTE
    CATERA
    CIMARRON
    COMMERCIAL SERIES
    CTS
    DEVILLE/FLEETWOOD
    ELDORADO
    ESCALADE
    ESCALADE ESV
    ESCALADE EXT
    LIMOUSINE
    OTHER AUTOMOBILE
    OTHER LIGHT TRUCK
    SEVILLE
    SRX
    STS
    UNKNOWN AUTOMOBILE
    UNKNOWN LIGHT TRUCK
    UNKNOWN VEHICLE
    XLR

CHECKER

    AEROBUS
    MARATHON
    OTHER AUTOMOBILE
    SUPERBA
    TAXI
    UNKNOWN AUTOMOBILE

CHEVROLET

CHEVROLET

ASTRO VAN
AVALANCHE
AVEO
BERETTA/CORSICA
BUS
C, K, R, V-SERIES PICKUP
CAMARO
CAVALIER
CELEBRITY
CHEVELLE/MALIBU (83-)
CHEVETTE
CITATION
COBALT
COLORADO
CORVAIR
CORVETTE
EL CAMINO
EQUINOX
FULLSIZE BLAZER (K, Tahoe)
G-SERIES VAN
GEO METRO
GEO STORM
GEO TRACKER
IMPALA/CAPRICE
LUMINA
LUMINA APV/VENTURE
LUV
MALIBU (1997+)
MEDIUM/HEAVY CBE
MEDIUM/HEAVY COE HIGH ENTRY
MEDIUM/HEAVY COE LOW ENTRY
MEDIUM/HEAVY; UNKNOWN ENGINE LOCATION
MEDIUM/HEAVY; UNKNOWN ENGINE LOCATION
MONTE CARLO ('70-'88) (RWD ONLY)
MONTE CARLO (1995+) (FWD ONLY)
MONZA
NOVA (-79)
NOVA/GEO PRIZM
OTHER AUTOMOBILE
OTHER BUS
OTHER LIGHT TRUCK
OTHER MEDIUM/HEAVY TRUCK
OTHER VEHICLE
P-SERIES VAN
S-10 BLAZER, BLAZER

CHEVROLET
    S-10/T-10
    SPECTRUM
    SPRINT/GEO SPRINT
    SSR
    SUBURBAN
    TRAILBLAZER (2002 and later)
    UNK TYPE TRUCK (LIGHT/MED/HEAVY)
    UNKNOWN AUTOMOBILE
    UNKNOWN BUS TYPE
    UNKNOWN LIGHT TRUCK
    UNKNOWN MEDIUM/HEAVY TRUCK
    UNKNOWN VEHICLE
    UPLANDER
    VAN DERIVATIVE
    VEGA

CHRYSLER
    300M
    CIRRUS
    CONCORDE
    CONQUEST
    CORDOBA
    CROSSFIRE
    INTREPID (CANADIAN)
    LASER
    LEBARON
    LEBARON GTS/GTC
    LHS
    NEON (EXPORT)
    NEW YORKER ('83-'90)
    NEW YORKER FIFTH AVENUE ('89)
    NEW YORKER SALON
    NEW YORKER/E CLASS/IMPERIAL/5TH AVENUE
    NEWPORT
    OTHER AUTOMOBILE
    OTHER LIGHT TRUCK
    PACIFICA
    PROWLER
    PT CRUISER
    RAMPAGE 2.2 (CAR BASED PICKUP)
    RWD ONLY-NEW YORKER/NEWPORT/5TH AVENUE/IMPERIAL
    SEBRING
    TC (MASERATI SPORT)
    TOWN AND COUNTRY
    UNKNOWN AUTOMOBILE
    UNKNOWN LIGHT TRUCK
    UNKNOWN VEHICLE

CHRYSLER
    VOYAGER
CITROEN
    OTHER AUTOMOBILE
    UNKNOWN AUTOMOBILE
CONSULIER
    OTHER AUTOMOBILE
    UNKNOWN AUTOMOBILE
DAEWOO
    LANOS
    LEGANZA
    NUBIRA
    OTHER AUTOMOBILE
    UNKNOWN AUTOMOBILE
    UNKNOWN VEHICLE
DAIHATSU
    CHARADE
    OTHER AUTOMOBILE
    OTHER LIGHT TRUCK
    ROCKY
    UNKNOWN AUTOMOBILE
    UNKNOWN LIGHT TRUCK
    UNKNOWN VEHICLE
DELOREAN
    OTHER AUTOMOBILE
    UNKNOWN AUTOMOBILE
DESOTO
    OTHER AUTOMOBILE
    UNKNOWN AUTOMOBILE
DESTA
    OTHER AUTOMOBILE
    UNKNOWN AUTOMOBILE
DIAMOND REO/REO
    MEDIUM/HEAVY - CBE
    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN
    MEDIUM/HEAVY - COE/HIGH ENTRY
    MEDIUM/HEAVY - COE/LOW ENTRY
    MEDIUM/HEAVY - OTHER
    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION
    MEDIUM/HEAVY TRUCK BASED MOTORHOME
    UNKNOWN MEDIUM/HEAVY TRUCK
DIVCO
    MEDIUM/HEAVY - CBE
    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN
    MEDIUM/HEAVY - COE/HIGH ENTRY
    MEDIUM/HEAVY - COE/LOW ENTRY
    MEDIUM/HEAVY - OTHER
    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION
    MEDIUM/HEAVY BASED MOTORHOME

DODGE

400
600
ARIES (K)
ASPEN
AVENGER
B-SERIES VANS
CARAVAN
CHALLENGER
CHALLENGER (ALL IMPORTED)
CHARGER (2006+)
COLT (EXCLUDES VISTA)
CONQUEST
CORONET/CHARGER/MAGNUM
D, W-SERIES PICKUP, W100-W350
D50, COLT P/U, RAM 50/RAM 100
DAKOTA
DART
DAYTONA
DIPLOMAT
DURANGO
DYNASTY
INTREPID
LANCER
MAGNUM
MEDIUM BUS
MEDIUM/HEAVY: CBE
MEDIUM/HEAVY: COE ENTRY POSITION UNKNOWN
MEDIUM/HEAVY: COE HIGH ENTRY
MEDIUM/HEAVY: COE LOW ENGRY
MEDIUM/HEAVY: UNKNOWN ENGINE LOCATION
MIRADA
MONACO
NEON
OMNI/CHARGER
OTHER AUTOMOBILE
OTHER BUS
OTHER LIGHT TRUCK
OTHER MEDIUM/HEAVY TRUCK
OTHER VEHICLE
POLARA/MONACO/ROYAL MONACO
RAIDER
RAM
RAMCHARGER
RAMPAGE 2.2, GT, SPORT
SHADOW

DODGE

    SPIRIT

    SPRINTER

    ST REGIS

    STEALTH

    STRATUS

    UNK TYPE TRUCK (LIGHT/MED/HEAVY)

    UNKNOWN AUTOMOBILE

    UNKNOWN BUS TYPE

    UNKNOWN LIGHT TRUCK

    UNKNOWN MEDIUM/HEAVY TRUCK

    UNKNOWN VEHICLE

    VAN DERIVATIVE

    VIPER

    VISTA

DUCATI

    MOTORCYCLE (000-050CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (125-349CC)

    MOTORCYCLE (350-449CC)

    MOTORCYCLE (450-749CC)

    MOTORCYCLE (750CC-OVER)

    MOTORCYCLE (UNKNOWN CC)

    OTHER MOTORED CYCLE

    UNKNOWN MOTORED CYCLE

EAGLE

    MEDALLION

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    PREMIER

    SUMMIT

    SUMMIT WAGON

    TALON

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

    VISION

EXCALIBER

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

FERRARI

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

FIAT

    124 (COUPE/SEDAN)

    124 SPIDER/RACER

    128

    850 (COUPE/SPYDER)

FIAT

BRAVA - 131

MEDIUM/HEAVY COE ENTRY POSITION UNKNOWN

MEDIUM/HEAVY COE HIGH ENTRY

MEDIUM/HEAVY COE LOW ENTRY

OTHER AUTOMOBILE

OTHER MEDIUM/HEAVY TRUCK

STRADA

UNKNOWN AUTOMOBILE

UNKNOWN MEDIUM/HEAVY TRUCK

UNKNOWN VEHICLE

X-1/9

FORD

AEROSTAR

ASPIRE

BRONCO-FULLSIZE

CONTOUR

COURIER

CROWN VICTORIA

E-SERIES VANS

ENGLISH FORD

ESCAPE

ESCORT/EXP

EXCURSION

EXPEDITION

EXPLORER/BRONCO ii/BRONCO (-77)

F-SERIES PICKUP

F450/550 PICKUP >4536 GVWR

FAIRLANE

FAIRMONT

FALCON

FESTIVA

FIESTA

FIVE HUNDRED

FOCUS

FREESTAR

FREESTYLE

GRANADA

GT

LASER

LTD II

LTD/CUSTOM/GALAXIE (ALL SIZES)

MAVERICK

MEDIUM BUS

MEDIUM/HEAVY CBE

MEDIUM/HEAVY COE HIGH ENTRY

MEDIUM/HEAVY COE LOW ENGRY

FORD

MEDIUM/HEAVY: COE ENTRY POSITION UNKNOWN
MEDIUM/HEAVY: UNKNOWN ENGINE LOCATION
MUSTANG/MUSTANG II
OTHER AUTOMOBILE
OTHER BUS
OTHER LIGHT TRUCK
OTHER MEDIUM/HEAVY TRUCK
OTHER VEHICLE
PINTO
PROBE
RANCHERO
RANGER
SPORT TRAC
TAURUS
TEMPO
THUNDERBIRD (ALL SIZES)
TORINO/GRAN TORINO/ELITE
UNK TYPE TRUCK (LIGHT/MED/HEAVY)
UNKNOWN AUTOMOBILE
UNKNOWN BUS TYPE
UNKNOWN LIGHT TRUCK
UNKNOWN MEDIUM/HEAVY TRUCK
UNKNOWN VEHICLE
VAN DERIVATIVE
WINDSTAR

FREIGHTLINER/WHITE

BUS CONVENTIONAL ENGINE OUT FRONT
BUS FRONT ENGINE/FLAT FRONT
BUS REAR ENGINE/FLAT FRONT
M-LINE WALK IN VAN
MEDIUM/HEAVY - CBE
MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN
MEDIUM/HEAVY - COE/HIGH ENTRY
MEDIUM/HEAVY - COE/LOW ENTRY
MEDIUM/HEAVY - OTHER
MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION
MEDIUM/HEAVY TRUCK BASED MOTORHOME
OTHER BUS
OTHER LIGHT TRUCK
SPRINTER/ADVANTAGE
UNKNOWN BUS TYPE
UNKNOWN LIGHT TRUCK
UNKNOWN LIGHT/MEDIUM/HEAVY TRUCK
UNKNOWN VEHICLE

FWD

MEDIUM/HEAVY - CBE

FWD

    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY - COE/HIGH ENTRY

    MEDIUM/HEAVY - COE/LOW ENTRY

    MEDIUM/HEAVY - OTHER

    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION

    MEIDUM/HEAVY TRUCK BASED MOTORHOME

    UNKNOWN MEDIUM/HEAVY TRUCK

GMC

    C, K, R, V-SERIES PICKUP

    CABALLERO/SPRINT

    CANYON

    FULLSIZE JIMMY/YUKON

    G-SERIES VAN

    JIMMY/TYPHOON/ENVOY

    MEDIUM BUS

    MEDIUM/HDAVY COE LOW ENTRY

    MEDIUM/HEAVY CBE

    MEDIUM/HEAVY COE HIGH ENTRY

    MEDIUM/HEAVY: COE ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY: UNKNOWN ENGINE LOCATION

    OTHER AUTOMOBILE

    OTHER BUS

    OTHER LIGHT TRUCK

    OTHER MEDIUM/HEAVY TRUCK

    P-SERIES VAN

    S15/T15/SONOMA

    SAFARI (MINIVAN)

    SUBURBAN

    UNK TYPE TRUCK (LIGHT/MED/HEAVY)

    UNKNOWN AUTOMOBILE

    UNKNOWN BUS TYPE

    UNKNOWN LIGHT TRUCK

    UNKNOWN MEDIUM/HEAVY TRUCK

    UNKNOWN VEHICLE

    VAN DERIVATIVE

GRUMMAN

    BUS-FLAT FRONT, REAR ENGINE

    LLV

    MEDIUM/HEAVY TRUCK - CBE

    MEDIUM/HEAVY TRUCK - COE HIGH ENTRY

    MEDIUM/HEAVY TRUCK - COE LOW ENTRY

    MEDIUM/HEAVY TRUCK ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY TRUCK UNKNOWN ENGINE LOCATION

    OTHER BUS

    OTHER LIGHT TRUCK

    OTHER MEDIUM/HEAVY TRUCK

GRUMMAN

    STEP-IN VAN

    UNK TYPE TRUCK (LIGHT/MED/HEAVY)

    UNKNOWN BUS TYPE

    UNKNOWN LIGHT TRUCK

    UNKNOWN MEDIUM/HEAVY TRUCK

    UNKNOWN VEHICLE

HARLEY-DAVIDSON

    MOTORCYCLE (000-050CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (125-349CC)

    MOTORCYCLE (350-449CC)

    MOTORCYCLE (450-749CC)

    MOTORCYCLE (750CC-OVER)

    MOTORCYCLE (UNKNOWN CC)

    OTHER MOTORED CYCLE

    UNKNOWN MOTORED CYCLE

HILLMAN

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

HINO

    MEDIUM/HEAVY - CBE

    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY - COE/HIGH ENTRY

    MEDIUM/HEAVY - COE/LOW ENTRY

    MEDIUM/HEAVY - OTHER

    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION

    MEDIUM/HEAVY BASED MOTORHOME

HONDA

    600

    ACCORD

    ATC/ATV (000-050CC)

    ATC/ATV (051-124CC)

    ATC/ATV (125-349CC)

    ATC/ATV (350CC-OVER)

    ATC/ATV (UNKNOWN CC)

    CIVIC/CRX/DEL SOL

    CR-V

    ELEMENT

    FCX

    INSIGHT

    MOTORCYCLE (000-050CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (125-349CC)

    MOTORCYCLE (350-449CC)

    MOTORCYCLE (450-749CC)

    MOTORCYCLE (750CC-OVER)

HONDA

    MOTORCYCLE (UNKNOWN CC)
    ODYSSEY
    OTHER AUTOMOBILE
    OTHER LIGHT TRUCK
    OTHER MOTORED CYCLE
    PASSPORT
    PILOT
    PRELUDE
    RIDGELINE
    S2000
    UNKNOWN AUTOMOBILE
    UNKNOWN LIGHT TRUCK
    UNKNOWN VEHICLE

HUDSON

    OTHER AUTOMOBILE
    UNKNOWN AUTOMOBILE

HYUNDAI

    ACCENT
    ELANTRA
    EXCEL
    OTHER AUTOMOBILE
    OTHER LIGHT TRUCK
    PONY
    SANTA FE
    SCOUPE
    SONATA
    TIBURON
    TUSCON
    UNKNOWN AUTOMOBILE
    UNKNOWN LIGHT TRUCK
    UNKNOWN VEHICLE
    XG300/350

IMPERIAL

    IMPERIAL
    OTHER AUTOMOBILE
    UNKNOWN AUTOMOBILE
    UNKNOWN VEHICLE

INDIAN

    MOTORCYCLE (000-050CC)
    MOTORCYCLE (051-124CC)
    MOTORCYCLE (125-349CC)
    MOTORCYCLE (350-449CC)
    MOTORCYCLE (450-749CC)
    MOTORCYCLE (750CC OR GREATER)
    MOTORCYCLE (UNKNOWN CC)
    OTHER MOTORED CYCLE

INDIAN
    UNKNOWN MOTORED CYCLE

INFINITI
    FX35/45

    G20

    G35

    I30

    I35

    J30

    M30

    M45

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    Q45

    QX4

    QX56

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

INTERNATIONAL
    BUS BASED MOTOHOME

    BUS-FLAT FRONT, FRONT ENGINE

    BUS-FLAT FRONT, REAR ENGINE

    CONVENTIONAL BUS

    MEDIUM HEAVY - CBE

    MEDIUM/HEAVY - COE HIGH ENTRY

    MEDIUM/HEAVY - COE LOW ENTRY

    MEDIUM/HEAVY: COE ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY: UNKNOWN ENGINE LOCATION

    MULTISTOP VAN

    OTHER BUS

    OTHER LIGHT TRUCK

    OTHER MEDIUM/HEAVY TRUCK

    OTHER VEHICLE

    PICKUP

    SCOUT

    TRAVELALL

    TRUCK BASED MOTORHOME

    UNK TYPE TRUCK (LIGHT/MED/HEAVY)

    UNKNOWN BUS TYPE

    UNKNOWN LIGHT TRUCK

    UNKNOWN MEDIUM/HEAVY TRUCK

    UNKNOWN VEHICLE

ISUZU
    AMIGO

    ASCENDER

    AXIOM

ISUZU

    CONVENTIONAL FRONT ENGINE
    FRONT ENGINE/FLAT FRONT
    I-MARK
    IMPULSE
    MEDIUM/HEAVY - CBE
    MEDIUM/HEAVY COE ENTRY POSITION UNKNOWN
    MEDIUM/HEAVY COE HIGH ENTRY
    MEDIUM/HEAVY COE LOW ENTRY
    MEDIUM/HEAVY UNKNOWN ENGINE LOCATION
    OASIS
    OTHER AUTOMOBILE
    OTHER BUS
    OTHER LIGHT TRUCK
    OTHER MEDIUM/HEAVY TRUCK
    P'UP (PICKUP) HOMBRE
    REAR ENGINE/FLAT FRONT
    RODEO
    STYLUS
    TROOPER/TROOPER II
    UNK TYPE TRUCK (LIGHT/MED/HEAVY)
    UNKNOWN AUTOMOBILE
    UNKNOWN BUS TYPE
    UNKNOWN LIGHT TRUCK
    UNKNOWN MEDIUM/HEAVY TRUCK
    UNKNOWN VEHICLE
    VEHICROSS

IVECO/MAGIRUS

    MEDIUM/HEAVY - CBE
    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN
    MEDIUM/HEAVY - COE/HIGH ENTRY
    MEDIUM/HEAVY - COE/LOW ENTRY
    MEDIUM/HEAVY - OTHER
    MEDIUM/HEAVY - UNKOWN ENGINE LOCATION
    MEDIUM/HEAVY BASED MOTORHOME
    UNKNOWN MEDIUM/HEAVY TRUCK

JAGUAR

    OTHER AUTOMOBILE
    S-TYPE
    UNKNOWN AUTOMOBILE
    UNKNOWN VEHICLE
    VANDEN PLAS
    X-TYPE
    X100
    XJ-S COUPE
    XJ6/12 SEDAN/COUPE/XJ8/
    XKE

JEEP / KAISER-JEEP
- CHEROKEE (1963 - 1983)
- CHEROKEE (1984 ON)
- CJ-2/CJ-3/CJ-4
- CJ-5/CJ-6/CH-7/CH-8
- COMANCHE
- GRAND WAGONEER
- LIBERTY
- OTHER LIGHT TRUCK
- PICKUP
- UNKNOWN LIGHT TRUCK
- UNKNOWN VEHICLE
- YJ-SERIES

JENSEN
- HEALY
- OTHER AUTOMOBILE
- UNKNOWN AUTOMOBILE

KAWASAKI
- ATC/ATV (000-050CC)
- ATC/ATV (051-124CC)
- ATC/ATV (125-349CC)
- ATC/ATV (350CC-OVER)
- ATC/ATV (UNKNOWN CC)
- MOTORCYCLE (000-050CC)
- MOTORCYCLE (051-124CC)
- MOTORCYCLE (125-349CC)
- MOTORCYCLE (350-449CC)
- MOTORCYCLE (450-749CC)
- MOTORCYCLE (750CC-OVER)
- MOTORCYCLE (UNKNOWN CC)
- OTHER MOTORED CYCLE
- UNKNOWN MOTORED CYCLE

KENWORTH
- MEDIUM/HEAVY - CBE
- MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN
- MEDIUM/HEAVY - COE/HIGH ENTRY
- MEDIUM/HEAVY - COE/LOW ENTRY
- MEDIUM/HEAVY - OTHER
- MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION
- MEDIUM/HEAVY TRUCK BASED MOTORHOME
- UNKNOWN MEDIUM/HEAVY TRUCK

KIA
- AMANTI
- OPTIMA
- OTHER AUTOMOBILE
- OTHER LIGHT TRUCK
- RIO

KIA

    SEDONA

    SEPHIA

    SORRENTO

    SPECTRA

    SPORTAGE

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

LADA

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

LAMBORGHINI

    COUNTACH 5000S

    JALPA

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

LANCIA

    BETA COUPE - ZAGATO

    BETA SEDAN-HPE

    OTHER AUTOMOBILE

    SCORPION

    UNKNOWN AUTOMOBILE

    UNKNOWN VEHICLE

LAND ROVER

    4.0 SE (RR)

    COUNTY LWB (RR) / COUNT CLASSIC (RR)

    DEFENDER 90 (LR)

    DISCOVERY (LR)

    FREELANDER

    LR3

    OTHER LIGHT TRUCK

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

LEXUS

    ES250/ES-300

    GS300/GS400

    GX470

    IS-300

    LS400

    LX 450/470

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    RX300

    SC 430

    SC-300/SC-400

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

LEXUS

    UNKNOWN VEHICLE

LINCOLN

    AVIATOR

    BLACKWOOD

    CONTINENTAL (82-ON)

    CONTINENTAL/TOWN CAR

    LS

    MARK

    MARK LT

    NAVIGATOR

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

    VERSAILLES

LOTUS

    ESPRIT

    EUROPE

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

MACK

    MEDIUM/HEAVY - CBE

    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY - COE/HIGH ENTRY

    MEDIUM/HEAVY - COE/LOW ENTRY

    MEDIUM/HEAVY - OTHER

    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION

    MEDIUM/HEAVY BASED MOTORHOME

    UNKNOWN MEDIUM/HEAVY TRUCK

MARMON

    MEDIUM/HEAVY - CBE

    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY - COE/HIGH ENTRY

    MEDIUM/HEAVY - COE/LOW ENTRY

    MEDIUM/HEAVY - OTHER

    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION

    MEDIUM/HEAVY BASED MOTORHOME

MASERATI

    BITURBO

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

MAZDA

    1800

    616/618

    626

    808

MAZDA

929

COSMO

GLC/PROTEGE/323

MAZDA 6

MAZDA PICKUP

MAZDA3

MIATA

MILLENIA

MIZER

MP3

MPV

MX-3

MX-6

NAVAJO

OTHER AUTOMOBILE

OTHER LIGHT TRUCK

R-100

RX-8

RX2

RX3

RX4

RX7

TRIBUTE

UNKNOWN AUTOMOBILE

UNKNOWN LIGHT TRUCK

UNKNOWN VEHICLE

MERCEDES BENZ

190

200/220/230/240/250/260/280/300/320 SE,CD,D,SD,ETC

220/280 C

230/280 SL

280/300SEL

300

300 SE/380/450 SE

300/350/380/450/500SL/560SL

350/380/420/450/560/ SLC

380/420/450/500/560SEL/500SEC/560SEC/350SDL/300SDL

400/500 E

600, 6.9 SEDAE

CL

CLK

E

G CLASS

M

MEDIUM BUS

MEDIUM/HEAVE - CBE

MERCEDES BENZ

    MEDIUM/HEAVY - COE HIGH ENTRY

    MEDIUM/HEAVY - COE LOW ENTRY

    MEDIUM/HEAVY: COE ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY; UNKNOWN ENGINE LOCATION

    OTHER AUTOMOBILE

    OTHER BUS

    OTHER LIGHT TRUCK

    OTHER MEDIUM/HEAVY TRUCK

    S CLASS

    SL CLASS

    SLK

    SLR MCLAREN

    UNK TYPE TRUCK (LIGHT/MED/HEAVY)

    UNKNOWN AUTOMOBILE

    UNKNOWN BUS TYPE

    UNKNOWN LIGHT TRUCK

    UNKNOWN MEDIUM/HEAVY TRUCK

    UNKNOWN VEHICLE

    VAN DERIVATIVE

MERCURY

    BOBCAT

    CAPRI-DOMESTIC

    CAPRI-FOREIGN

    COMET

    COUGAR

    COUGAR/XR7

    CYCLONE

    LYNX/LN-7 (82-83)

    MARAUDER

    MARINER

    MARQUIS/MONTEREY

    MONARCH

    MONTEGO

    MONTEGO (2005+)

    MONTEREY (2004+)

    MOUNTAINEER

    MYSTIQUE

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    PANTERA

    SABLE

    TOPAZ

    TRACER

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

MERCURY

    VILLAGER

    ZEPHYR

MERKUR

    OTHER AUTOMOBILE

    SCORPIO

    UNKNOWN AUTOMOBILE

    UNKNOWN VEHICLE

    XR4Ti

MG

    MGA

    MGB ('67-'75)

    MGB ('76-'79)

    MGC

    MIDGET

    OTHER AUTOMOBILE

    TA/TC/TD/TF

    UNKNOWN AUTOMOBILE

    UNKNOWN VEHICLE

MINI

    COOPER,COOPER S

MITSUBISHI

    3000GT

    CONVENTIONAL FRONT ENGINE

    CORDIA

    DIAMANTE

    ECLIPSE

    ENDEAVOR

    EXPO WAGON

    FRONT ENGINE/FLAT FRONT

    GALANT

    LANCER

    MEDIUM/HEAVY - COE LOW ENTRY

    MINIVAN

    MIRAGE

    MONTERO

    OTHER AUTOMOBILE

    OTHER BUS

    OTHER LIGHT TRUCK

    OTHER MEDIUM/HEAVY TRUCK

    OUTLANDER

    PICKUP

    PRECIS

    REAR ENGINE/FLAT FRONT

    SIGMA

    STARION

    TREDIA

MITSUBISHI

UNK TYPE TRUCK (LIGHT/MED/HEAVY)

UNKNOWN AUTOMOBILE

UNKNOWN LIGHT TRUCK

UNKNOWN MEDIUM/HEAVY TRUCK

UNKNOWN TYPE BUS

UNKNOWN VEHICLE

MORRIS

MINOR

OTHER AUTOMOBILE

UNKNOWN AUTOMOBILE

MOTO-GUZZI

ATC/ATV (000-050CC)

ATC/ATV (051-124CC)

ATC/ATV (125-349CC)

ATC/ATV (350CC-OVER)

ATC/ATV (UNKNOWN CC)

MOTORCYCLE (000-050CC)

MOTORCYCLE (051-124CC)

MOTORCYCLE (125-349CC)

MOTORCYCLE (350-449CC)

MOTORCYCLE (450-749CC)

MOTORCYCLE (750CC-OVER)

MOTORCYCLE (UNKNOWN CC)

OTHER MOTORED CYCLE

UNKNOWN MOTORED CYCLE

NEOPLAN

BUS - CONVENTIONAL FRONT ENGINE

BUS - FRONT ENGINE/FLAT FRONT

BUS - REAR ENGINE/FLAT FRONT

BUS BASED MOTORHOME

OTHER BUS

NISSAN / DATSUN

1200/210/B210

200/240 SX

310

350Z

510

610

710

810/MAXIMA

ALTIMA

AXXESS

DATSUN/NISSAN PU/FRONTIER

F10

MEDIUM/HEAVY COE HIGH ENTRY

MICRA

NISSAN / DATSUN

    MURANO

    NX 1600/2000

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    OTHER MEDIUM/HEAVY TRUCK

    PATHFINDER

    PATHFINDER ARMADA

    PL411, RL411

    PULSAR

    QUEST

    ROADSTER

    SENTRA

    STANZA

    TITAN

    UNK TYPE TRUCK (LIGHT/MED/HEAVY)

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN MEDIUM/HEAVY TRUCK

    UNKNOWN VEHICLE

    VAN

    XTERRA

    Z-CAR, ZX

NORTON

    MOTORCYCLE (000-050CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (125-349CC)

    MOTORCYCLE (350-449CC)

    MOTORCYCLE (450-749CC)

    MOTORCYCLE (750CC-OVER)

    MOTORCYCLE (UNKNOWN CC)

    OTHER MOTORED CYCLE

    UNKNOWN MOTORED CYCLE

OLDSMOBILE

    ACHIEVA

    ALERO

    AURORA

    BRAVADA

    CALAIS

    CIERA

    COMMERCIAL SERIES

    CUTLASS (FWD)

    CUTLASS (RWD-ONLY)

    DELTA 88

    FIRENZA

    INTRIGUE

    NINETY-EIGHT

OLDSMOBILE
- OMEGA
- OTHER AUTOMOBILE
- OTHER LIGHT TRUCK
- OTHER VEHICLE
- SILHOUETTE
- STARFIRE
- TORONADO-TROFEO
- UNKNOWN AUTOMOBILE
- UNKNOWN LIGHT TRUCK
- UNKNOWN VEHICLE

OSHKOSH
- MEDIUM/HEAVY - CBE
- MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN
- MEDIUM/HEAVY - COE/HIGH ENTRY
- MEDIUM/HEAVY - COE/LOW ENTRY
- MEDIUM/HEAVY - OTHER
- MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION
- MEDIUM/HEAVY BASED MOTORHOME

OTHER DOMESTIC
- OTHER BUS
- OTHER LIGHT TRUCK
- OTHER MAKE
- OTHER MEDIUM/HEAVY TRUCK
- OTHER VEHICLE
- UNKNOWN MAKE

OTHER FOREIGN
- OTHER BUS
- OTHER LIGHT TRUCK
- OTHER MAKE
- OTHER MEDIUM/HEAVY TRUCK
- OTHER VEHICLE
- UNKOWN MAKE

OTHER MAKE (med/heavy
- BUS BASED MOTORHOME
- OTHER AUTOMOBILE
- OTHER BUS
- OTHER LIGHT TRUCK
- OTHER MEDIUM/HEAVY TRUCK
- OTHER VEHICLE
- TRUCK BASED MOTORHOME

OTHER MAKE MOPED
- 0-50cc
- 51-124cc
- OTHER MOTORED CYCLE
- UNKNOWN MOTORED CYCLE
- UNKNOWN cc

OTHER MAKE MOTORED

OTHER MAKE MOTORED

    0-50cc

    125-349cc

    350-449cc

    450-749cc

    51-124cc

    750c or greater

    ATC/ATV 0-50cc

    ATC/ATV 125-349cc

    ATC/ATV 350cc OR GREATER

    ATC/ATV 51-124cc

    ATV/ATC UNKNOWN cc

    OTHER MOTORED CYCLE

    UNKNOWN MOTORED CYCLE

    Unknown cc

PETERBILT

    MEDIUM/HEAVY - CBE

    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY - COE/HIGH ENTRY

    MEDIUM/HEAVY - COE/LOW ENTRY

    MEDIUM/HEAVY - OTHER

    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION

    MEDIUM/HEAVY BASED MOTORHOME

    UNKNOWN MEDIUM/HEAVY TRUCK

PEUGEOT

    304

    403

    404

    405

    504/505

    604

    MOTORCYCLE (000-050CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (UNKNOWN CC)

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

    UNKNOWN MOTORED CYCLE

    UNKNOWN VEHICLE

PLYMOUTH

    ACCLAIM

    ARROW

    ARROW PICKUP (FOREIGN)

    BARRACUDA

    BREEZE

    CARAVELLE

    CHAMP/COLT (EXCLUDES VISTA)

    COLT VISTA

PLYMOUTH

    CONQUEST
    CRICKET
    FURY
    GRAN FURY
    HORIZON
    LASER
    NEON
    OTHER AUTOMOBILE
    OTHER LIGHT TRUCK
    PROWLER
    RELIANT (K)
    SAPPORO
    SATELLITE/BELVEDERE
    SCAMP (CAR BASED PICKUP)
    SUNDANCE
    TRAILDUSTER
    UNKNOWN AUTOMOBILE
    UNKNOWN LIGHT TRUCK
    UNKNOWN VEHICLE
    VALIANT/DUSTER/SCAMP
    VAN-FULLSIZE (E-SERIES)
    VOLARE
    VOYAGER (MINIVAN)

PONTIAC

    6000
    ASTRE
    AZTEK
    BONNEVILLE/CATALINA/PARISIENNE
    FIERO
    FIREBIRD/TRANS AM
    G6
    GRAND AM
    GRAND PRIX (FWD)
    GRAND PRIX (RWD)
    J2000/SUNBIRD/SUNFIRE
    LEMANS (88-on)
    LEMANS/TEMPEST (THRU 79)
    OTHER AUTOMOBILE
    OTHER LIGHT
    OTHER LIGHT TRUCK
    PHOENIX
    SUNBIRD (THRU 80)
    T1000/1000
    TRANS SPORT/MONTANA
    UNKNOWN AUTOMOBILE
    UNKNOWN LIGHT TRUCK

PONTIAC

> UNKNOWN VEHICLE
> VENTURA
> VIBE

PORSCHE

> 911
> 912
> 914
> 924
> 928
> 930
> 944
> 959
> 968
> 986 BOXSTER
> CAYENNE
> OTHER AUTOMOBILE
> UNKNOWN AUTOMOBILE
> UNKNOWN VEHICLE

RELIANT

> OTHER AUTOMOBILE
> UNKNOWN AUTOMOBILE

RENAULT/AMC

> 12
> 15
> 16
> 17
> ALLIANCE/ENCORE/GTA, CONVERTIBLE
> ALPINE
> DAUPHINE/10/R-8/CARAVELLE
> FUEGO
> LECAR
> MEDALLION
> OTHER AUTOMOBILE
> PREMIER
> R18I
> UNKNOWN AUTOMOBILE
> UNKNOWN VEHICLE

ROLLS ROYCE/BENTLEY

> CLOUD/SHADOW SERIES
> OTHER AUTOMOBILE
> UNKNOWN AUTOMOBILE

SAAB

> 9 - 3
> 9 - 5
> 9-2X
> 9-7X
> 9000, CS

SAAB

    95/96/97

    99/99E/900

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    SONNETT

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

SATURN

    EV

    ION

    LS/ LS1/ LS2/L100/L200/L300

    LW/LW1/ LW2/ LW200/300

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    RELAY

    SC

    SL

    SW

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

    VUE

SCANIA

    MEDIUM/HEAVY - CBE

    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY - COE/HIGH ENTRY

    MEDIUM/HEAVY - COE/LOW ENTRY

    MEDIUM/HEAVY - OTHER

    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION

    MEDIUM/HEAVY BASED MOTORHOME

SIMCA

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

STERLING

    827S

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

    UNKNOWN VEHICLE

STERLING TRUCKS

    MEDIUM/HEAVY - CBE

    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN

    MEDIUM/HEAVY - COE/HIGH ENTRY

    MEDIUM/HEAVY - COE/LOW ENTRY

    MEDIUM/HEAVY - OTHER

    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION

STUDEBAKER

STUDEBAKER

    CRUISER

    GRAN TURISMO

    HAWK

    LARK

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

STUTZ

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

SUBARU

    360

    BAJA

    BRAT DL, GL

    DL/FE/G/GF/GL/GLF/STD/LOYALE

    FORESTER

    IMPREZA

    JUSTY

    LEGACY

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    OUTBACK

    STAR

    SVX

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

    XT/XT6

SUNBEAM

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

SUZUKI

    AERIO

    ATC/ATV (000-050CC)

    ATC/ATV (051-124CC)

    ATC/ATV (125-349CC)

    ATC/ATV (350CC-OVER)

    ATC/ATV (UNKNOWN CC)

    ESTEEM

    FORENZA

    GRAND VITARA

    MOTORCYCLE (000-050CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (125-349CC)

    MOTORCYCLE (350-449CC)

    MOTORCYCLE (450-749CC)

    MOTORCYCLE (750CC-OVER)

SUZUKI

MOTORCYCLE (UNKNOWN CC)
OTHER AUTOMOBILE
OTHER LIGHT TRUCK
OTHER MOTORED CYCLE
RENO
SA310
SAMURA
SIDEKICK/GRAND VITARA
SWIFT
UNKNOWN AUTOMOBILE
UNKNOWN LIGHT TRUCK
UNKNOWN MOTORED CYCLE
UNKNOWN VEHICLE
VERONA
X-90/VITARA
XL7

TOYOTA

4-RUNNER
AVALON
CAMRY
CARINA
CELICA
COROLLA
CORONA
CRESSIDA
CROWN
ECHO
HIGHLANDER
HIGHLANDER
LANDCRUISER
MATRIX
MINVAN/PREVIA
MR-2
OTHER AUTOMOBILE
OTHER LIGHT TRUCK
PASEO
PICKUP
PRIUS
RAV-4
SCION TC
SCION XA
SCION XB
SEQUOIA
SIENNA
SOLARA
STARLET

TOYOTA

    SUPRA

    T-100

    TACOMA

    TERCEL

    TUNDRA

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

TRIUMPH

    GT-6

    HERALD

    MOTORCYCLE (000-050CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (125-349CC)

    MOTORCYCLE (350-449CC)

    MOTORCYCLE (450-749CC)

    MOTORCYCLE (750CC-OVER)

    MOTORCYCLE (UNKNOWN CC)

    OTHER AUTOMOBILE

    SPITFIRE

    STAG

    TR4

    TR6

    TR7/8

    UNKNOWN AUTOMOBILE

    UNKNOWN MOTORED CYCLE

    UNKNOWN VEHICLE

TVR

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

UNKNOWN DOMESTIC

    UNKNOWN AUTOMOBILE

    UNKNOWN BUS TYPE

    UNKNOWN LIGHT TRUCK

    UNKNOWN MEDIUM/HEAVY TRUCK

    UNKNOWN MOTORED CYCLE

    UNKNOWN VEHICLE

UNKNOWN FOREIGN

    UNKNOWN AUTOMOBILE

    UNKNOWN BUS TYPE

    UNKNOWN LIGHT TRUCK

    UNKNOWN MEDIUM/HEAVY TRUCK

    UNKNOWN MOTORED CYCLE

    UNKNOWN VEHICLE

UNKNOWN

    UNK TYPE TRUCK (LIGHT/MED/HEAVY)

    UNKNOWN AUTOMOBILE

UNKNOWN

    UNKNOWN BUS TYPE

    UNKNOWN LIGHT TRUCK

    UNKNOWN MEDIUM/HEAVY TRUCK

    UNKNOWN MOTORED CYCLE

    UNKNOWN VEHICLE

UNKNOWN

    Unknown bus type

    Unknown medium/heavy truck

VOLKSWAGEN

    411/412

    BEETLE 1300/1500

    CORRADO

    DASHER

    EUROVAN

    FOX

    GOLF III

    GOLF/CABRIOLET/GTI

    JETTA

    JETTA III

    KARMANN GHIA

    NEW BEETLE

    OTHER AUTOMOBILE

    OTHER LIGHT TRUCK

    OTHER VEHICLE

    PASSAT

    PHAETON

    QUANTUM

    RABBIT

    RABBIT PICKUP

    SCIROCCO

    SQUAREBACK/FASTBACK

    SUPER BEETLE

    THE THING (181)

    TOUAREG

    UNKNOWN AUTOMOBILE

    UNKNOWN LIGHT TRUCK

    UNKNOWN VEHICLE

    VANAGON/CAMPER

VOLVO

    122

    142/144/145

    164

    1800

    240/242/244/245

    262/264/265

    4O SERIES

VOLVO
    60 SERIES
    70 SERIES
    740
    760/780
    80 SERIES
    850
    90 SERIES
    940
    960
    MEDIUM BUS
    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION
    MEDIUM/HEAVY CBE
    MEDIUM/HEAVY COE HIGH ENTRY
    MEDIUM/HEAVY COE LOW ENTRY
    MEDIUM/HEAVY: COE ENTRY POSITION UNKNOWN
    OTHER AUTOMOBILE
    OTHER BUS
    OTHER MEDIUM/HEAVY TRUCK
    UNKNOWN AUTOMOBILE
    UNKNOWN MEDIUM/HEAVY TRUCK
    UNKNOWN TYPE BUS
    UNKNOWN VEHICLE
    V50
    XC90

WARD LAFRANCE
    MEDIUM/HEAVY - CBE
    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN
    MEDIUM/HEAVY - COE/HIGH ENTRY
    MEDIUM/HEAVY - COE/LOW ENTRY
    MEDIUM/HEAVY - OTHER
    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION
    MEDIUM/HEAVY BASED MOTORHOME

WESTERN STAR
    MEDIUM/HEAVY - CBE
    MEDIUM/HEAVY - COE/ENTRY POSITION UNKNOWN
    MEDIUM/HEAVY - COE/HIGH ENTRY
    MEDIUM/HEAVY - COE/LOW ENTRY
    MEDIUM/HEAVY - OTHER
    MEDIUM/HEAVY - UNKNOWN ENGINE LOCATION
    MEDIUM/HEAVY BASED MOTORHOME

WINNEBAGO
    LIGHT TRUCK BASED MOTORHOME
    MEDIUM / HEAVY OTHER
    MEDIUM / HEAVY UNKNOWN
    MOTOR HOME
    UNKNOWN TYPE LIGHT MOTORHOME

WINNEBAGO

    UNKNOWN VEHICLE

    VAN BASED MOTORHOME

YAMAHA

    ATC/ATV (000-050CC)

    ATC/ATV (051-124CC)

    ATC/ATV (125-349CC)

    ATC/ATV (350CC-OVER)

    ATC/ATV (UNKNOWN CC)

    MOTORCYCLE (000-050CC)

    MOTORCYCLE (051-124CC)

    MOTORCYCLE (125-349CC)

    MOTORCYCLE (350-449CC)

    MOTORCYCLE (450-749CC)

    MOTORCYCLE (750CC-OVER)

    MOTORCYCLE (UNKNOWN CC)

    OTHER MOTORED CYCLE

    OTHER VEHICLE

    UNKNOWN MOTORED CYCLE

YUGO

    GV

    OTHER AUTOMOBILE

    UNKNOWN AUTOMOBILE

    UNKNOWN VEHICLE

Compact (wheelbase >= 254 but < 265 cm)   **02**

     Automobile Derivatives

         Auto based pickup

         Auto based panel

         Large limousine

         Three-wheel automobile or automobile derivative

     Automobiles

         Convertible

         2-door sedan, hardtop, coupe

         3-door/2-door hatchback

         Station Wagon

         Hatchback, number of doors unknown

         5-door/4-door hatchback

         4-door sedan, hardtop

         Other automobile type

         3-door coupe

         Unknown automobile type

Compact pickup truck (<= 4,536 kgs GVWR)   **30**

     Light Conventional Trucks (Pickup style cab,<=4,536kgs GVWR)

         Compact pickup

Compact utility vehicle   **14**

     Utility Vehicles (<= 4,536 kgs GVWR)

         Compact utility

Full Size (wheelbase >= 278 but < 291 cm)   **04**

     Automobile Derivatives

         Auto based pickup

         Large limousine

         Three-wheel automobile or automobile derivative

         Auto based panel

     Automobiles

         Convertible

         4-door sedan, hardtop

         Station Wagon

         Other automobile type

         Unknown automobile type

         Hatchback, number of doors unknown

         5-door/4-door hatchback

         3-door/2-door hatchback

         2-door sedan, hardtop, coupe

Intermediate (wheelbase >= 265 but < 278 cm)   **03**

Automobile Derivatives
    Auto based pickup

    Auto based panel

    Large limousine

    Three-wheel automobile or automobile derivative

Automobiles
    Convertible

    4-door sedan, hardtop

    2-door sedan, hardtop, coupe

    3-door/2-door hatchback

    5-door/4-door hatchback

    Hatchback, number of doors unknown

    Unknown automobile type

    Other automobile type

    Station Wagon

Large pickup truck (<= 4,536 kgs GVWR)   **31**
    Light Conventional Trucks (Pickup style cab,<=4,536kgs GVWR)
        Large pickup

Large utility vehicle (<= 4,536 kgs GVWR)   **15**
    Utility Vehicles (<= 4,536 kgs GVWR)
        Large utility

Large van (<= 4,536 kgs GVWR)   **21**
    Van Based Light Trucks (<= 4,536 kgs GVWR)
        Large van

Largest (wheelbase >= 291 cm)   **05**
    Automobile Derivatives
        Auto based pickup

        Auto based panel

        Three-wheel automobile or automobile derivative

        Large limousine

    Automobiles
        Convertible

        2-door sedan, hardtop, coupe

        3-door/2-door hatchback

        4-door sedan, hardtop

        Station Wagon

        Unknown automobile type

        Other automobile type

        Hatchback, number of doors unknown

        5-door/4-door hatchback

Minivan (<= 4,536 kgs GVWR)   **20**
    Van Based Light Trucks (<= 4,536 kgs GVWR)
        Minivan

Motored cycle   **80**

Motored Cycles(Does Not Include all-Terrain Veh /Cycles)
    Motorcycle

    Moped

    Three-wheel motorcycle or moped

    Unknown motored cycle type

    Other motored cycle (minibike, motorscooter)

Other bus (>4,536 kgs GVWR)   **58**
    Buses (Excludes Van Based)
        Other bus type

Other light truck (<= 4,536 kgs GVWR)   **45**
    Other Light Trucks (<= 4,536 kgs GVWR)
        Cab chassis based

        Other light conventional truck type

        Light truck based motorhome (chassis mounted)

        Truck based panel

Other pickup truck type (<= 4,536 kgs GVWR)   **38**
    Light Conventional Trucks (Pickup style cab,<=4,536kgs GVWR)
        Pickup with slide-in camper

        Convertible pickup

Other van type (<= 4,536 kgs GVWR)   **28**
    Van Based Light Trucks (<= 4,536 kgs GVWR)
        Step van or walk-in van

        Van based motorhome

        Other van type

        Van based other bus

Other vehicle   **90**
    Other Vehicles
        ATV(All-Terrain Vehicle) & ATC(All-Terrain Cycle)

        Farm equipment other than trucks

        Other vehicle type

        Construction equipment other than trucks

        Snowmobile

School bus (excludes van based)(>4,536 kgs GVWR)   **50**
    Buses (Excludes Van Based)
        School bus

Subcompact/mini (wheelbase < 254 cm)   **01**
    Automobile Derivatives
        Auto based pickup

        Auto based panel

        Three-wheel automobile or automobile derivative

        Large limousine

Automobiles

    Convertible

    2-door sedan, hardtop, coupe

    3-door/2-door hatchback

    3-door coupe

    4-door sedan, hardtop

    5-door/4-door hatchback

    Station Wagon

    Hatchback, number of doors unknown

    Other automobile type

    Unknown automobile type

Tractor without trailer   **67**

  Medium/Heavy Trucks (> 4,536 kgs GVWR)

    Truck-tractor with no cargo trailer

Tractor-trailer(s)   **68**

  Medium/Heavy Trucks (> 4,536 kgs GVWR)

    Truck-tractor pulling one trailer

    Truck-tractor pulling two or more trailers

    Truck-tractor (unknown if pulling trailer)

Truck (>4,536 kgs GVWR)   **60**

  Automobiles

    Station Wagon

  Medium/Heavy Trucks (> 4,536 kgs GVWR)

    Step van

    Single unit straight truck(4500kg<GVWR<=8850kg)

    Single unit straight truck (GVWR > 12,000 kgs)

    Medium/heavy Pickup (>=4,536 kgs)

    Medium/heavy truck based motorhome

    Single unit straight truck (GVWR unknown)

    Single unit straight truck(8850kg<GVWR<=12000kg)

Unknown   **99**

  Unknown Vehicle Type

    Unknown body type

Unknown bus type   **59**

  Buses (Excludes Van Based)

    Unknown bus type

Unknown light truck type (<= 4,536 kgs GVWR)   **48**

  Other Light Trucks (<= 4,536 kgs GVWR)

    Unknown light truck type

Unknown light vehicle type   **49**

  Unknown Vehicle Type

    Unknown light vehicle type

Unknown light/medium/heavy truck type   **79**

  Medium/Heavy Trucks (> 4,536 kgs GVWR)

    Unknown truck type (light/medium/heavy)

Unknown medium/heavy truck type   **78**

  Medium/Heavy Trucks (> 4,536 kgs GVWR)

    Unknown medium/heavy truck type

Unknown passenger car size   **09**

    Automobile Derivatives

        Auto based pickup

        Three-wheel automobile or automobile derivative

        Large limousine

        Auto based panel

    Automobiles

        Convertible

        2-door sedan, hardtop, coupe

        3-door/2-door hatchback

        4-door sedan, hardtop

        5-door/4-door hatchback

        Station Wagon

        Hatchback, number of doors unknown

        Other automobile type

        Unknown automobile type

Unknown pick up truck (<=4,536 kgs GVWR)   **39**

    Light Conventional Trucks (Pickup style cab,<=4,536kgs GVWR)

        Unknown pickup style light conventional truck type

Unknown utility type   **19**

    Utility Vehicles (<= 4,536 kgs GVWR)

        Utility, unknown body type

Unknown van type (<= 4,536 kgs GVWR)   **29**

    Van Based Light Trucks (<= 4,536 kgs GVWR)

        Unknown van type

Utility station wagon (<= 4,536 kgs GVWR)   **16**

    Utility Vehicles (<= 4,536 kgs GVWR)

        Utility station wagon

Van Based school bus (<= 4,536 kgs GVWR)   **24**

    Van Based Light Trucks (<= 4,536 kgs GVWR)

        Van based school bus

Body Type Appendix

Automobile Derivatives

Auto based pickup	10
Auto based panel	11
Three-wheel automobile or	13
Large limousine	12

Automobiles

Convertible	1
2-door sedan, hardtop, coupe	2
4-door sedan, hardtop	4
3-door/2-door hatchback	3
Hatchback, number of doors	7
3-door coupe	17
Unknown automobile type	9
Other automobile type	8
Station Wagon	6
5-door/4-door hatchback	5

Buses (Excludes Van Based)

School bus	50
Other bus type	58
Unknown bus type	59

Light Conventional Trucks (Pickup style

Compact pickup	30
Unknown pickup style light	39
Large pickup	31
Pickup with slide-in camper	32
Convertible pickup	33

Medium/Heavy Trucks (> 4,536 kgs

Step van	60
Medium/heavy truck based	65
Truck-tractor pulling one	68
Truck-tractor (unknown if	70
Medium/heavy Pickup	74
Truck-tractor (Cab Only, or	66
Unknown truck type	79
Unknown medium/heavy	78
Truck-tractor pulling two or	69
Truck-tractor with no cargo	67
Single unit straight truck	64
Single unit straight	61
Single unit straight	62
Single unit straight truck	63

Motored Cycles(Does Not Include all-

Three-wheel motorcycle or	82
Other motored cycle	88
Moped	81
Motorcycle	80
Unknown motored cycle type	89

Other Light Trucks (<= 4,536 kgs GVWR)

Cab chassis based	40
Other light conventional truck	45
Unknown light truck type	48
Light truck based motorhome	42
Truck based panel	41

Other Vehicles

ATV(All-Terrain Vehicle) &	90
Snowmobile	91
Farm equipment other than	92
Construction equipment other	93

Other vehicle type	97
Unknown Vehicle Type	
Unknown body type	99
Unknown light vehicle type	49
Utility Vehicles (<= 4,536 kgs GVWR)	
Compact utility	14
Large utility	15
Utility station wagon	16
Utility, unknown body type	19
Van Based Light Trucks (<= 4,536 kgs	
Minivan	20
Large van	21
Step van or walk-in van	22
Van based motorhome	23
Van based school bus	24
Van based other bus	25
Other van type	28
Unknown van type	29